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ABSTRACT

This proceedings contains 13 papers on the role of distance education in sustainable community development, particularly in Canada's remote northern communities. Four sections cover theoretical issues such as the meaning of "community" in international distance programs and the influence of students' immediate community on their survival in distance education programs; international and African perspectives; specific Canadian projects, including three involving First Nations communities; and issues related to management, pedagogy, and the student-teacher relationship. Papers are: (1) "Thoughts on the Theory of Community and Distance-Education: The Significance for Maintenance and Sustainability of Development Programs" (Denis Wall); (2) "Linking Distance Education to Sustainable Community Development" (Michael Robinson); (3) "Trends and Issues in Distance Education with Implications for Northern Development" (Margaret Haughey); (4) "Distance Education in Northern and Remote Communities: Understanding Social Networks, Change, and Process" (Richard D. Hotchkis, Linda Driedger); (5) "Commonwealth of Learning and Distance Education" (Hafiz Wali); (6) "The Role of Adult Education in Assisting Sustainable Development in Remote Area Dwellers of Botswana" (Johannes N. S. Mutanyatta); (7) "Successfully Implementing a Native Teacher Education Program through Distance Education in Labrador" (Dennis B. Sharpe); (8) "Distance Education Delivery Networks--Role in Community and Institutional Development" (Terry Anderson); (9) "Developing and Implementing a Distance Education Secondary School Program for Isolated First Nation Communities in Northwestern Ontario" (Margaret Fiddler); (10) "Literacy Proposal for the Community of Nose Creek, Alberta" (Pat Larsen); (11) "Distance Education: En Route from Management to Pedagogy" (W. Bruce Clark); (12) "Teacher Perspectives on Distance Education" (Noel Gour); and (13) "Library Services to Athabasca University Students" (Steve Schafer). Contains references. (SV)

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Distance Education and Sustainable Community Development

Denis Wall

Michael Owen

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Distance Education and Sustainable Community Development

Selected Articles from a Conference on Distance Education and Sustainable Community Development, Canadian Circumpolar Institute, December 1990

Editors

Denis Wall
Canadian Circumpolar Institute, University of Alberta

Michael Owen
University of Saskatchewan

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Introduction

The first national conference on Distance Education and Sustainable Community Development resulted in this collection of papers and statements by selected participants. The conference was intended to explore the meaning of sustainability in the context of "community development." The Canadian Circumpolar Institute at the University of Alberta, Edmonton, was a major sponsor because of the dual foci on northern and remote communities and on distance education.

The conference marked the initial stages in the exploration of a theoretical base upon which distance education should be developed. The papers included here are by individuals intimately involved in local community issues either as academics or as practising educators in the field and their collective views represent current thinking and practice in the field of relations between a particular educational methodology and the community it is intended to serve. We have just begun to understand the relation between the two, community and educational methodology, on many levels.

This document is divided roughly into four sections. The first deals with theoretical issues such as the meanings of "community" in international distance education programs (Wall), the meanings of "sustainable development" (Robinson), trends and issues that may be important to linking development and distance education (Haughey), and the influences of the students immediate community on his or her survival in a distance education system (Hotchkis).

Wali and Mutanyatta next speak to international and African issues regarding the perceived need and tremendous potential for distance education initiatives on a global scale.

The third set of papers deal with specific Canadian projects. Sharpe describes a teacher training program delivered to indigenous peoples in Labrador. Anderson discusses the importance of both the relations between institutions in developing a distance education network and the relations between the network and the northern Ontario communities it is intended to help. Fidler provides a description of a parallel network in northern Ontario which uses radio to deliver secondary school programs to remote First Nations communities. Larsen illustrates perhaps the unconventional thinking that may be required by managers of education systems in the conceptualization of a distance delivered program for remote communities. The difficulty in making theory practical seems to be overcome in her proposal for a literacy program which focuses on a tiny isolated northern community of some 28 people. The trusted and equal participation of the community is central to both the development of the proposal and the delivery of the program.

The fourth and final set of papers deal with other issues. Clark takes the reader through some management issues in distance education to what he considers to be the more important issues of pedagogy and the relations between the education system and the student. Gour takes an advocacy stance for the role of the teacher within a distance education system. He expresses the position of the Alberta Teachers' Association and by so doing emphasizes the fact that for a distance education system to be sustainable our analyses have to be broadly based taking into account not only students and their communities but also the relations between students and teachers where theory becomes practice, where community meets the system, in a very basic sense. And finally, Schafer discusses the necessary flow of learning resources within a distance education system.

I would like to express my sincere thanks to all who attended and to those who presented papers at the conference in December, 1990. But a particular word of thanks must go to Dr. Glen Sinclair of Vancouver for his adept, succinct, and spirited summary of the conference.

Sincere appreciation is due to Dr. Michael Owen and Athabasca University for taking on the publication of this document.

D. W.

Thoughts on the Theory of Community and Distance-Education: The Significance for Maintenance and Sustainability of Development Programs

Denis Wall
Canadian Circumpolar Institute
University of Alberta

Introduction

The purpose of this paper is to address a number of issues currently relevant to international development particularly to teacher training via distance-education: sustainability, the role of communities, the meaning of the concept of community, and the different levels of relations within a distance-education program. The thoughts included are not exclusive to distance-education programming. They can be relevant in any international development context.

The Role of Community in Our Thinking

A major issue in international programming is the role of the community. For distance educators who train teachers to understand the local context in which distance-education training takes place is of paramount importance.

In an attempt to emphasize a point about community-based education, and by no means intending to denigrate pedagogical theory, I would like to draw at first from academic theories about sustainable development, about renewable resource management, about notions of common property management, and about the role of indigenous peoples' in those endeavours. The main theoretical points, certainly not exclusive to this domain of thought, are that without the participation of indigenous peoples as partners in design (planning, policy making, and so on) and implementation, and without respect for indigenous knowledge systems, conventional management models have not done the job they were expected to do (see e.g., Freeman and Carbyn, 1988, Young, 1988).

We are discovering that successful management and development programs do not come easily. Some promise is held in the concept of "sustainable development" as introduced by the Brundtland Report (Our Common Future, 1987). Robinson (this volume) sums up the concept this way:

> At its roots this literature champions self-reliance, local control, a grassroots-up methodological approach and a growing disdain for the specialized services of experts. It is also mindful of environmental stewardship, the contributions of land-based traditional economies and concerns itself philosophically with the pursuit of the well-lived life.

Two ideas are important throughout. The first is that partnerships and participation in development and management of international projects are necessary because each of the partners has something to offer that will enable a project to increase in value and in sustainability. This idea addresses problems of ownership and control of projects. The second point is that the combined knowledge of each of the partners can broaden the base on which techniques, process and results are built.

The points are the same when it comes to distance-education teacher training in remote communities: without the participation of indigenous (local) people as partners in education, their knowledge systems cannot be appropriately respected and the sustainability of the educational endeavour may be jeopardized. Without intimate management partnerships, without addressing issues of control at all levels, and without relationships entailing trust and respect, the hope that education may assist with sustainable economic and human resource growth also must be diminished.

Pelton (1991:5) makes this simple comment about the distance education process, "Local people cannot be eliminated without a negative impact."

Relationships within the Distance-Education System

While the focus on community does not prescribe the level at which the analysis should take place, it does help us come to terms with the situational realities at different levels in a distance-education system.

There can be a good deal of confusion about what the concept "community" actually means. One unusual example of a community is the trade unions in Britain which participate in a distance education program described by Spencer (1990). He suggests that distance education projects have increased the cohesiveness of that particular community of labour organizations.

For the purposes of this discussion "community" is perhaps best understood as a social system about which boundaries can be described because of the integrated and cohesive organization among its components and because of the relations between the system and its environment. Such a definition allows the notion of community to be tagged to any sized social system and provides a considerable range of flexibility when we, distance-educators, come to assess what it is we are talking about.

As a point of departure, the focus on communities in sustainable and participatory development immediately draws our attention to relationships within the educational process, especially those between students (and the community in which they live) and the distance-education program.

Haughey (this volume) at the very least opens a discussion of the relationship between adult learners and the distance-education system. She emphasizes the need for a greater awareness about adult learners and their communities when she states that as distance educators ". . . we have to recognize their historical and political context, their gender and ethnicity." She goes on to say:

> Cultural values and ways of knowing also need to be seriously considered in determining the role of the student in distance delivered courses . . .

There are a number of levels of community that can be considered in distance-education. At each of these there will be relationships that need to be described, accommodated, incorporated into planning, development, and implementation. These can include local, regional, national and international levels of interaction. Each can be analysed separately, of course, recognizing that the overall context has influences on the relations being considered.

One of the levels we can talk about is the community close to the student. We can assess the influences of various social groups on students or we can assess the students' relations with the education system. For example, what role do students play in evaluation of the program, or in the development of resources, or in the knowledge that students and teachers work with.

Addressing this level of relationship from a theoretical perspective, Haughey (this volume) speaks about the knowledge systems of students.

> Knowledge is not out there, given, transferred from teacher to learner but is constructed by the learner as he or she attempts to make sense of the situation and give it meaning. We also now recognize the important influence of prior experience in this process. It is not enough to design instruction in which learners are told what they need to know; we now have to include more opportunities for learners to graft what they are learning to their own experience and also opportunities where they bring forward that experience for scrutiny and possible change. We have to recognize what learners already know, and also reconsider whose knowledge is of most worth.

We can also talk about regional relationships for example between central administrations and regional centres or between regional centres and tutors. We can analyse communities and relationships at the national and international levels for example by focusing on the relationships between international aid organizations and national departments of education. What becomes the focus of any analysis will be dictated in part by the actual situation under investigation. The ways of describing specific relations and issues will be very much dependent on the national context.

Planning and Structuring the System

Of course, it is virtually impossible to know all the influences on students and distance-education programs. We have to be open in the delivery of distance-education programs to the unexpected. It is such openness, underscored by goodwill, good faith, and flexibility that will make our distance-education programs optimally successful and maintainable.

One of the points Sharpe (this volume) makes in describing a teacher training distance delivered program is that flexibility in delivery methods is necessary to account for the peculiar circumstances of the students such as the hours of work of the students and the social commitments they have as mature adults in their communities. There are also a variety of motivational and learning style factors that must be accounted for. He also describes regional issues such as

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the difficulties posed by remote terrain, unexpected storms, few roads, and lack of communications facilities. It becomes very difficult for external 'experts' to understand many of these factors without partnerships with people who understand these factors as a result of their lived experiences.

Possibly by structuring the distance-education system to accommodate optimal relationships, partnerships, between students and teachers, in fact all the way through the system, eventually innovative ways can be developed that account for problems encountered and thus promote the maintenance and sustainability of the educational endeavour.

That said, let me turn to examples of distance education projects in northern and remote communities which illustrate the need to analyse community involvement and the levels and types of relationships within programs.

Examples of Community-Based Distance-Education Projects

This section will describe how examples of distance-education projects handle the issue of community involvement and at what levels in the system this is done. The first examples mentioned are of distance-education programs not dealing with teacher training. The second group are specifically oriented to teacher training programs.

A practical example that addresses the relationship between the student's local community and the distance-education system is Contact North in northwestern Ontario. Anderson (1991) emphasizes the close relationship between Contact North and the local communities. He mentions the particular importance of local co-ordinators who act as counsellors and contacts between the student and the distance-education system. He emphasizes the need for community facilities in which students can feel at home. Here the role of the local community and its relationship to this distance-education project is being explored and becoming clearer. In a second paper, Anderson (this volume) addresses another level of relationship, that is the relationship between the administration of Contact North and the University administrations served by the Project. He discusses in particular the struggle to position the project as a co-ordinating body for distance-education development and delivery to Northwestern Ontario.

The second example, is a proposal for a distance education literacy program delivered to a community in northern Alberta. This proposal is important to the discussion here because of the unconventional concepts used to build the proposal. The unconventional approach is informed by the commitment to

forge a strong and sustainable relationship between the educational system and the local community of the students. Initially, it was a member of the community who, with others, developed and promoted the proposal and sought funding (Larsen, this volume).

To illustrate the local community focus of the program, let me list just some of the approaches taken in the proposal:

1. that course content be related to the local community
2. that the local community provide the tutor
3. that courses be directed toward the cultural and economic development in the local community
4. that courses build on the students' skills and knowledge
5. that learning resources and curricula be developed with the community in mind.

Larsen states this approach was intended "... to actively respect the integrity and aspirations of the community and the wisdom, skills and knowledge of its residents."

With regard to curriculum development, she states

> ... the curriculum is developed in consort with the learners as learning progresses. This approach to curriculum development
> 1. provides considerable flexibility in attending to the diversity of learning needs typically found in adult groups,
> 2. gives credence to the belief that adult learners have much to contribute to their own learning, and
> 3. assures, in an on-going way, that what is learned and how it is learned is meaningful to the learner.

The role of the instructor can be reassessed in this context. The instructor becomes a learning facilitator whose task it is to support and guide the learner instead of leading and directing the learner. Instructors lead from behind so that their involvement in the adult student's learning decreases as the latter's skills and know-how increase.

The first example of distance-education teacher training programs is a proposal for a native teacher training program in Alberta. The central theme of the proposal (Alberta Advanced Education, 1989) is the relationship between the local community of the student and the distance-education teacher training system. This is the only level of analysis in this proposal; however, it is particularly interesting because of the thorough attempt to address that level.

The proposal suggests that native (aboriginal) teacher training must be community-based to be efficient and effective. In other words, the teacher training program to be feasible and fruitful must account for the social context within which the student lives. The authors go on to suggest that student teachers must work with professionals, teachers and other resource people (with whom they already live and interact) who would be their tutors, counsellors, and colleagues; local elders would be part of the cultural learning process and support network for students; local people would be involved in the selection of candidates.

In yet another example, Sharpe (this volume) describes a distance teacher training program delivered from Memorial University to Innu and Montagnais teachers who are already active teachers in their remote communities in Labrador but who because of a previous short-term training program now need further training and legitimate certification.

It can be seen that in a very practical way the local communities of the students do affect the delivery of distance-education programming. Sharpe shows that the scheduling of courses must account for local school times, church meetings, and other community activities such as fishing or hunting. He says this is "(a) seemingly, small issue, but one that could change course outcomes for the better." Sharpe also indicates that the predominant language of the community and the students is an important factor to be considered in program delivery. Of the two groups of aboriginal peoples involved in the Memorial University—Labrador teacher education program, the Innu students require translators and the courses, therefore, need to be designed to offer more face-to-face interaction. Sharpe suggests the administration of the program has to be flexible enough to test different approaches such as the use of tutors, the length of courses offered, the location of courses, combinations of course delivery methods and the support facilities needed by the students—local counselling, local master teachers, local day care facilities, local communications facilities. At the same time another level, the university regulations and procedures, needs to be accounted for.

And finally, Ansere (1989) describes a modular distance-education teacher training program in Ghana. Administratively the Modular program comes under the Teacher Education Division of Ghana Education Services. A major problem is that the Modul Staff cannot take their own final decisions. This slows decision-making. This point of focus for Ansere is the relations at the national level of the distance education system. The author refers to the Open University and the National Teacher Institute which appear to have solved this particular problem by setting up regional and district offices. Speaking about the relations at an international level, between external aid organizations and

the national distance education system. Ansere suggests the program is too dependent on external aid. He says there is a great need for a reassessment of the relationship to develop better arrangements to involve local staff. Most of the work is being done by external staff not by indigenous staff, he suggests. Ansere (Ibid:224) states that "(t)he solution to this problem is to find local personnel who have the requisite attitude and capacity and make them understudies to the foreign experts."

These examples illustrate that in each is an implicit understanding of the levels of interaction that must be analysed. I think that such analyses must be more consciously and clearly described. As distance-educators we need to come to terms with the precise level of analysis required and we must clearly identify the relevant interactions between levels of analysis. Such analyses should be directed at helping sustain and maintain a flexible system of distance-education programming.

Conclusion

Mutual influence, respect, trust, caring, and goodwill are characteristics to be strived for in innovative indigenous educational situations in North America; indeed, the role of the community and the role of the school within the community has been a significant point of departure in discussions about education.

Those who design teacher training programs cannot hope to get terribly far without a partnership in development and implementation with those who are students and the hosts of the program. Only the hosts, be they national representatives, regional representatives, community (settlement) representatives, can know the realities of their social (kinship, language, spiritual, and so on), economic and political situations. Whether or not a distance-education program is connected or grounded to the everyday activity of the hosts very much influences the success of a project.

We require a reorientation from universal models to a critical awareness of local contexts. The main needs are for community ownership, involvement, and participation in the development projects. These ideas have gained a good deal of acceptance over perhaps the past 10 years, with the growing awareness that planning, implementation, and maintenance without the integrated participation of community, or indigenous knowledge systems essentially are doomed to failure when the 'experts' leave.

Teacher training then should be intimately and securely related to the community in which the student-teacher learns. Distance education while providing access to those who might not otherwise have had an opportunity to become teachers, also provides an opportunity to assist in sustainable human resource and economic development. It affords an opportunity NOT to force change on a community from outside but an opportunity to create with mutual respect a system of education that can meet, to the greatest possible extent cultural, economic, spiritual and environmental needs. But this can only be done with political will and goodwill. The balance between mutual respect and asymmetrical control is delicate and distance educators have to be aware of this and act to maintain mutuality.

In the end the important understandings about distance-education initiatives and about the levels of relationship in programs may be these:

1. That distance educators are not operating in a vacuum into which students and local, regional, or national communities are pulled.

2. That the variety of levels in a distance-education system must be clearly described and understood.

3. That the participation of students and communities in the distance-education process is fundamental to success.

4. That the knowledge systems of indigenous peoples must be respected and will inform distance educators in what they do.

5. That the delicate balance between the unilateral power to structure and mutual respect in education requires ethical guidelines to maintain, and a great deal of caring and goodwill.

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Linking Distance Education to Sustainable Community Development

Michael Robinson
Arctic Institute of North America
Calgary

> Give a man a fish . . . and you are helping him a little bit for a short while; teach him the art of fishing and he can help himself all his life. On a higher level: supply him with fishing tackle; this will cost you a good deal of money, and the result remains doubtful; but even if fruitful, the man's continuing livelihood will still be dependent on you for replacements. But teach him how to make his own fishing tackle and you have helped him to become not only self-supporting but also self-reliant and independent (Schumacher, 1973:169-170).

> Distance education . . . That's what we had to do in my time—go to Edmonton for high school. You could only go up to grade nine back home (per.comm. Elmer Ghostkeeper).

In preparing to write this paper I spoke to colleagues who live and work in northern communities about what they understood by the terms "distance education" and "sustainable development." Everybody consulted had an idea about the meaning of these terms, but all of the ideas were different. And the informants had great difficulty linking the two terms together. In this small personal sample of opinion, sustainable development had more currency in local usage; distance education was thought to be a southern academic notion, "something cooked up in Calgary or Edmonton perhaps." Hence this

paper explores the emerging relationship between the two terms. Because I am more conversant with sustainable development and its ideological roots, we begin our exploration here.

Introduction to the Sustainable Development Concept

To first find the term "sustainable development" you have to turn to Brundtland Report—*Our Common Future* (1987); to understand the evolution of the term, however, requires a lot more page turning! Arguably western scholars can begin with the creation account in Genesis, the first book of Moses:

> Then God said, "Let us make humankind in our image, after our likeness; and let them have dominion over the fish of the sea, and over the birds of the air, and over the cattle, and over all the earth, and over every creeping thing that creeps upon the earth." So God created humankind in his own image, in the image of God he created him; male and female he created them. And God blessed them, and God said to them, "Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth" (NRSV, Genesis 1:26-28).

These words at the literal level of interpretation place humankind above nature; they remove us from the position of aboriginal stewards and co-participants, and empower us as owners, managers and developers. In essence they provide the moral basis of the modern industrial economy and cut us off from our spiritual birthright developed over three million years of homonid evolution as hunters and gatherers. In Genesis we are given spiritual permission to move from the bush economy to the agricultural economy with its attendant notion of private property ownership, crop surpluses, special castes, walled towns, taxes, literacy, armies, priests and other specialists. In this move we began the sacrifice of sustainability.

It is simplistic, however, to lay all the blame on Moses (or more properly, his followers who wrote the words attributed to him a thousand years after his death). As Lynn White Jr. wrote in his article entitled "The Historical Roots of Our Ecologic Crisis":

> No new set of basic values has been accepted in our society to displace those of Christianity. Hence we shall continue to have a worsening ecologic crisis until we reject the Christian axiom that nature has no reason for existence save to serve man (Science, 1967:1207).

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White struggled to promote an alternative Christian view of nature, and proposed Saint Francis of Assisi as a patron saint for ecologists. In Francis he found a heretical proponent of the "spiritual autonomy of all parts of nature" (Science, 1967:1207). White rejected the then contemporary beatnik affinity for Zen Buddhism because he felt it was too conditioned by Asian history. He was "dubious of its viability among us" (Science, 1967:1206).

In the 1980s a growing band of modern Christian writers began searching for an ecological theology that could guide and inspire us in the face of impending ecological crisis. A leader of the emerging eco-theologians is Father Thomas Berry (1988), a Passionist monk who lives in New York city. Within the confines of the scriptures, Father Berry argues for a reinterpretation of Genesis and a special relationship with aboriginal First Nations:

> In their traditional mystique of the earth, the First Nations are emerging as one of our surest guides into a viable future (1988:1).

Father Berry believes that the only hope for recovering ecological harmony lies in infusing the industrial world with aboriginal values derived from the land:

> With supreme shock we discover that our historic mission is not what we thought it was. Beyond that we discover that this continent is a delicate balance of life systems, that the fuels for our machines are limited, that defacing the earth defiles ourselves and destroys the divine voice that speaks so powerfully through every phase of cosmic activity (1988:22).

In other words, we must stop taking Genesis literally and tune in to our bush economy antecedents, whose present day representatives are the people of the First Nations.

We face a broad dilemma in revisiting our earlier values through the example of present day First Nations. All around us the natural world is in decline and our literal acceptance of "be fruitful and multiply" has placed populations on the earth in circumstances that require agribusiness to survive. We are therefore constrained in our attempts to recapture ecological harmony, and we are increasingly reliant on agricultural and industrial modes of production. So the question is: how can we achieve sustainable development in an over-populated, urbanized and largely industrial landscape? Luckily a diverse global experience and literature have contributed to the evolution of answers to this question over the last sixty years. At its roots this literature champions self-reliance, local control, a grassroots-up methodological approach and a

growing disdain for the specialized services of experts. It is also mindful of environmental stewardship, the contributions of land-based traditional economies and concerns itself philosophically with the pursuit of the well-lived life.

Many of the early writers on sustainable development have now achieved cult status, and their works are being re-issued to new generations of students. Mahatma Gandhi's creation in 1934 of the All-Indian Village Industries Association (A.I.V.I.A.), promoting a vision of sustainable rural economies with a decentralized economic base and local production and consumption (Woodcock 1972:81-89), today motivates Canadian community development practitioners and writers in the Maritimes and the North. Gandhi gave up his law practice, cut his ties with the industrial economy and donned peasant clothes in 1936 to live in Segaon village and immerse himself in experiments with new crop production, hand-made cloth, handicrafts and the concept of self-supporting education. Students in Segaon were taught that education is a privilege. They were required to apply their vocational training to village service while still at school. The Segaon experiment allowed Gandhi to practice what he preached and to learn first hand the realities of village life. In doing so he created a working model of sustainable development based on village-scale institutions, local decision making, and face-to-face relationships. Following in his footsteps, Gandhi's disciples have now developed hundreds of model villages

> in which local industries based on locally produced raw materials, good sanitation, basic education and the diminution of purdah (veiling of women), and untouchability, together with training in better farming methods have produced a superior standard of living and a sense of increased dignity among the people (Woodcock 1972:84).

E. F. Schumacher also shared Gandhi's frustration with theorizing without practical experience. After graduating in economics at New College, Oxford in 1933 he taught for a short while at Columbia University in New York. The classroom was no substitute for the reality he sought, however, and Schumacher left to go farming and to dabble in journalism. He wanted to reach a broader audience with his ideas about the practice of economics "as if people mattered" (1974). Schumacher championed the Buddhist ideal that production from local resources for local needs is the most rational form of economic life (1974:51-60). He argued that dependence on foreign imports was destabilizing and that true development is locally-controlled and locally sustainable (1974:57-58). Schumacher also invoked Bertrand de Jouvenal, the French political philosopher, who found fault with the global trends towards urbanization and conurbation:

> As the world is ruled from towns where men are cut off from any form of life other than human, the feeling of belonging to an ecosystem is not revived. This results in harsh and improvident treatment of things upon which we ultimately depend, such as water and trees (Gregg, 1958).

To Schumacher, the industrial economy caused the perversion of local wisdom derived from agrarian societies. "The Buddhist economist would insist that a population basing its economic life on non-renewable fuels is living parasitically, on capital instead of income" (1974:57-58). In consuming its capital in the form of environmental degradation the industrial economy contains the seeds of its demise. Schumacher joined with Galbraith (1962) in demonstrating that the squandering of non-renewable resources, and the diminution of human dignity associated with mass production of non-essential commodities, was development without heed to environmental, rural or spiritual values. It was his personal anathema, and there was only one way out: "the Middle Way between materialist heedlessness and traditionalist immobility" (1974:60).

Very much in the quest for the "Middle Way," the Dag Hammarskjold Foundation (1975) carried on with Schumacher's mission. Since 1975 this foundation has been promoting "Another Development" as an alternative to both capitalism and socialism. "Another Development" signified:

> . . . development as a whole. Its ecological, cultural, social, economic, institutional and political dimensions can only be understood in their systematic interrelationships, and action in its service must be integrated.
>
> Another Development is (1) geared to the satisfaction of needs, beginning with the eradication of poverty, (2) endogenous and self-reliant, relying on the strength of the societies that undertake it, and (3) in harmony with the environment (Dag Hammerskjold Foundation 1975:28).

The Hammarskjold approach blends Gandhi's sense of village self-reliance with the practice of economics as if people mattered. Another Development requires a careful mortising of development activities into the local environment, "rather than changing the environment to fit into activities" (Dubbs 1988:14).

Writing from a Canadian perspective in 1979, Benjamin Higgins and Jean Downing Higgins in *Economic Development of a Small Planet* also carry forward the *Small is Beautiful* message of Schumacher and the alternative vision of the Hammerskjold Foundation. In their words:

> The concept of development now includes all elements of human life that contribute to human welfare, including nutrition, health, shelter, employment, the physical environment, the sociocultural environment (quality of life) and such matters as participation in the decision making process, a sense of human dignity of belonging — anything pertaining to the "style" or pattern of development most appropriate to a country's values and circumstances (1979:151-152).

Higgins and Higgins also harken back to the coining of the term "unified approach" by the 1969 Stockholm conference of the UN Expert Group on Social Policy and Planning in National Development. The "unified approach" describes holistic development across four themes: the creation of local employment; the creation and local retention of wealth; the promotion of local culture and values in the development process; and the entrenchment of environmental stewardship. In essence the "unified approach" combines the contributions of Gandhi, Schumacher, Hammarskjold and Higgins and Higgins in one thematic philosophy.

Current Theoretical Perspectives and Approaches

The 1980s saw a mushrooming of development literature. The publication of *Our Common Future* (1987) served to rekindle the thinking and doing process we have traced back to the Indian village of Segaon. As Schumacher wrote on the last page of *Small is Beautiful*:

> Everywhere people ask: "What can I actually do!" The answer is as simple as it is disconcerting: we can, each of us, work to put our own inner house in order. The guidance we need cannot be found in science or technology, the value of which utterly depends on the ends they serve; but it can still be found in the traditional wisdom of mankind (1974:293).

A signal contributor to the current debate on praxis is Paul Hawken author of *The Next Economy* (1983) and *Growing a Business* (1987). Hawken has always written about what he does and what he does has always been philosophically motivated. He is convinced that small businesses in the information and service economy are the way of the future, and that they must exemplify service quality, knowledge over mass, environmental stewardship and self-reliance. Aligned with Schumacher and Galbraith on the demise of the industrial economy, Hawken forecasts a movement away from mass markets and mass production (1987:47), and argues that "the child with his thousand needs and desires matures into the adult", and so as a "post industrial economy, we are the economic analogue of that adult" (1987:43).

The industrial economy is giving way, in Hawken's view, to the "informative economy."

While he does not use the term unified approach, Hawken's writing is centred on the four key themes that emerged from the 1969 Stockholm UN conference on social policy. He advocates local, individual action to create jobs, very much in the mainstream American tradition of entrepreneurship. He stresses retention of locally generated wealth and assiduous reinvestment in the community, including tithing of a certain percentage of pre-tax profits to the neighbourhood the business serves, a conspicuous combination of corporate culture with community culture, and consequently, a conspicuous promotion of environmental stewardship. On the topic of environment, Hawken writes in a vein similar to Schumacher that "today we are eating into past reserves (1983:112) and that "the very nature of our industrial, 'mass' economy has caused it to reach some very real limits in terms of what the environment can provide and support" (1983:180).

Hawken's businesses (Erewhon Trading Co., one of North America's first natural food stores and Smith and Hawken, Ltd., the premier garden and horticultural catalog company) exemplify his personal philosophy and their conspicuous success embodies Schumacher's dictum to get "our own inner house in order" (1974:293). His approach as a writer is the same as Gandhi and Schumacher—he has lived his ideas and comes at the reader with a combination of theory and personal experience. He has created sustainable employment for himself and his employees and he provides an entrepreneurial prescription for the future that builds on both traditional wisdom and a shrewd analysis of the economic future.

In Canada another conspicuous move from thinking to doing has been accomplished by Professor Douglas House of Memorial University in Newfoundland. As chairman of the Royal Commission on Employment and Unemployment (R.C.E.U.) he oversaw preparation of *Building on Our Strengths* (1986), which strongly promotes the unified approach to development. While noting a general tendency to blame government for the evils of welfare program dependency, the R.C.E.U. stresses the need to move beyond assignment of blame to the creation of sustainable development options. They stress the selection of options across all sectors, including, non-renewable production of oil and gas (1986:447). The commission writes that the high volume, short term revenues from oil and gas in turn can be used to lower provincial debts and taxes, improve social services and create short-term business opportunities.

Key to the R.C.E.U.'s recommendations, however, is the creation of sustainable long-term employment in areas of traditional Newfoundland strength:

> The title of our Report asserts that, in working towards a post-industrial society, we have strengths—not just social strengths but economic strengths as well—that have been too little recognized. Flexibility, adaptability, occupational pluralism, home production, the rhythm of a seasonal life-style, household self-reliance — these are catchwords that capture the traditional culture of outport Newfoundland. In almost all the blueprints offered us for industrialization, these have been seen as barriers to economic development. And yet, ignored, battered or deprecated, Newfoundland's small communities have stubbornly persisted (1986:24).

For over two hundred years Newfoundland outports have persevered, adhering to local traditions and honing a sustainable approach to living based on home production and harvest from land and sea. The outport life has long advocated local production for local needs with strong economic traditions of lumber and firewood production, house and farm building bees, family garden plots, church suppers, cooperative fish production, community singing and theatre, and handicraft manufacture. Remoteness from the off-island metropolitan centres of Canadian commerce has guaranteed the persistence of these hinterland economic adaptations that otherwise might have been lost in the tide of urban and industrial development. One gets the distinct impression that Gandhi, Schumacher and Hawken would all cheer on the stubborn residents of outport Newfoundland.

What the R.C.E.U. recommends is a Hawken-style information intensification of the Newfoundland economy. Agriculture, fisheries, services (the fastest-growing segment of the Newfoundland economy in recent years) and tourism are all promoted as centres for new economic growth. In each case the R.C.E.U. argues for re-thinking the status quo. Rather than building golf courses and industrial economy hotel chains, they point to Newfoundland's special market niche advantages. By combining computerized booking systems, outport bed and breakfast, the tradition of the church supper, and harvest festivals with mummery, Newfoundland can offer unique cultural experiences to world tourists. The key lies in unifying, packaging and promoting local strengths rather than importing and justifying off-island attractions.

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The intelligence and efficacy of the R.C.E.U.'s recommendations have recently been brought into sharp focus by the Sprung greenhouse joint venture with the Peckford administration. In this case, a technology that had failed to demonstrate sustainability in Calgary was imported as an agricultural panacea to Newfoundland. Twenty million Newfoundland tax dollars were pumped into the project over a three year period to produce cucumbers, "never a staple of the Newfoundland diet" (pers.comm. Dr. Doug House). Now in bankruptcy and enshrouded in law suits, the greenhouses lie fallow and local staff are unemployed.

Under the microscope of unified development, the Sprung joint venture failed to sustain local employment and income generation, it did not promote a beneficial corporate/community culture union and it did not achieve the basics of environmental stewardship. An unverified technology instead wasted tax dollars, promoted another Newfoundland boom and bust cycle, and ignored the dietary preference of Newfoundlanders and the production capacity of island market gardens. Perhaps the worst legacy of the joint venture was the reinforcement of a negative economic stereotype of Newfoundlanders.

On the bright side, however, the cucumber development policies of the past provincial government in part contributed to its downfall, and a new provincial government under premier Clyde Wells has been placed in office. One of the first steps of the new administration was to entice Professor House from academe for a three year stint as chairperson of the Economic Recovery Commission. His first task is examining the potential for implementation of the R.C.E.U.'s recommendations!

Considering the Well-Lived Life

Up to this point in our consideration of the evolution of the concept of sustainable development, we have focussed on economic, cultural and environmental parameters. To this discussion we must now add a new factor—health. Health is the essential prerequisite for the well-lived life, and without it unified development is impossible. It follows that environmental conditions which impair health detract from our quest for sustainable development, and as the Canadian Institute for Advanced Research (1989) and Evans and Stoddart (1990) have recently argued, socio-psychological factors are also increasingly linked to morbidity and mortality. Whilst the reader is cautioned that existing evidence is clearly only suggestive (1989:ii, iii), the Canadian Institute for Advanced Research (C.I.A.R.) notes that "the negative effects of unemployment may relate as much to the impact on self-esteem or sense of control, and on social connections and communication, as on any

associated scarcity'' of health care resources. As well the C.I.A.R. notes that members of modern societies share disproportionately in the major improvements in health care delivery. In fact ''life expectancies continue to be graded by social class or status, whether measured by income, education or occupational status'' (1989:i).

What all this means is still moot, but Evans and Stoddart are beginning to piece together an interesting hypothesis. They note that the Japanese have recently achieved the highest life expectancy in the world (1990:58). Average life expectancy continues to rise in Japan and is now setting new standards for the possible in human populations (1990:59). Furthermore, the Japanese spend proportionately less than most western democracies on health care. As a nation, the Japanese maintain high personal savings rates. We are all by now also well aware of Japanese labour and management philosophy and the nature of the economic and social contract between the individual and the firm. The high personal savings rates of the Japanese enable national access to low-cost long term capital, which in turn is invested in research and development and new plants and equipment. Japanese factories consequently are among the best in the world and product quality is very high. Could it be that the resulting boost in national self-esteem and individual self-control is contributing to socio-psychological bolstering of the Japanese immune system? If so, does this not argue for a radical restructuring of the economic and social contract with industry and government in Canada?

Evans and Stoddart certainly *suggest* that extractive resource economies vulnerable to externally generated business cycle swings do not contribute to employee health. They also suggest (1990:61) that by limiting the growth of the health care sector, resources can be freed up to devote to necessary capital investment in industrial plant. All this suggests that in the interests of sustainable economic development we must be conscious of the need for creating work environments that minimize class distinctions, that use state of the art technology, that provide certainty of continued employment and skills upgrading, and that promote self-esteem and a sense of personal control over one's destiny. These factors may be necessary for living the well-lived life and not just a protracted death in an extractive economy. And what point is the quest for sustainable development if it is not conducted in the context of the well-lived life?

Forging the Link Between Distance Education and Sustainable Community Development

It is now time to bond unified development, the well-lived life and distance education in the cause of sustainable community development. *The first and most obvious link is that distance education serves small communities, many of which are infused with traditional wisdom and struggling to retain or recapture self-reliance in an economic environment characterized by change and unpredictability.* In many mid-northern and northern communities people are also increasingly concerned with environmental stewardship issues, which typically are introduced from outside and are apparently beyond local control. The northern Alberta pulp mill proposals, the current economic recession, the wind-down of the Beaufort and Mackenzie Valley oil patch and the increasing litany of plant closures and lay-offs in the metropolitan centres of Calgary and Edmonton lead us locally to despair as our employment options are limited and the environmental uncertainties of new mega projects are great. Where do we go from here and who is showing the way?

While many northern and remote communities have ample experience of government programs and the industrial economy, they lack exposure to the Middle Way. While practical experience in the bush economy and traditional wisdom are still in strong supply, they have been deprecated by several decades of mega project promotion and exposure to the industrial economy. House's lament for the indigenous capacity of the Newfoundland outports also echoes through northern Alberta and the Mackenzie Valley. While conspicuous case studies exist of applied Hawkenism (e.g., the Paddle Prairie Mall, Ghostkeeper Synergetics, and the Metis Morgan Farm; Robinson and Ghostkeeper (1988)), the first impulse of many aspiring entrepreneurs is that their idea will not work in their community. In any event, for the past 20 years it has been easier to work for government or big oil companies.

Surely now is the time for distance educators to fire up the teleconference facilities to carry forward the messages of sustainable community development. Those paralyzed by despair should be infused with Gandhi, Schumacher, Hammarskjold, Galbraith, House and Hawken.

To these names might also be added those of the international participatory action research network, writers and activists such as John Gaventa (1988), Francisco De Souza (1988), Rajesh Tandon (1988), and Budd Hall (1988). Their contribution to sustainable community development is the empowerment of adults in small communities to undertake their own research. Participatory action research has grown from the general critique of social

science in recent years (Hall: 288), and combines community will for change with an educational process that immediately engages local people in research. It is a means for taking action for sustainable community development. Hall outlines the following basic elements of participatory action research:

1. The problem originates in the community itself and the problem is defined, analysed, and solved by the community.

2. The ultimate goal of research is the radical transformation of social reality and the improvement of the lives of the people involved. The beneficiaries of the research are members of the community itself.

3. Participatory research involves the full and active participation of the community in the entire research process.

4. Participatory research involves a whole range of powerless groups of people: the exploited, the poor, the oppressed, the marginal, etc.

5. The process of participatory research can create a greater awareness in the people of their own resources and mobilize them for self-reliant development.

6. It is a more scientific method of research in that the participation of the community in the research process facilitates a more accurate and authentic analysis of social reality.

7. The researcher is a committed participant and learner in the process of research, which leads to militancy on his/her part, rather than detachment (1988:289).

While community economics, cultural and environmental sustainability are not addressed in the above elements, they can lead to these ends. Element 5 is the most directly on point in this respect, as it speaks to the local use of resources in the cause of self-reliant development. It also harkens back to the Gandhian concept of self-supporting education, immediately of value to both the student and his/her village.

Some Distance Education Curriculum Ideas and Support from the Arctic Institute

It is not the purpose of this paper to detail the existing distance education programs at Alberta and Northwest Territories colleges and universities; it is more the point to explore the role of distance education in remote and northern communities. By combining telephone, teleconference capabilities, electronic mail systems, and interactive computer software, it is now possible for northern students to stay home and learn in their electronic cottages. By adding the potential of a biweekly or monthly tutorial visit by the teacher, students are further reinforced in their various programs by on-site tutorials. With the advent of sustainable development curricula and appropriate case study materials, northern students will be able to examine unified development initiatives at home.

Because of the perceived lack of locally relevant curricula the Arctic Institute has prepared a textbook on sustainable northern small businesses. This work, written by Wanda Wuttunee, provides northern students and aspiring entrepreneurs with fifteen case studies of existing sustainable northern small businesses. Each of the businesses profiled shares at least a 5-year business history, a record of progressive profit accumulation and local training and employment, a conspicuous matching of community and corporate cultures, and a local reputation for environmental stewardship. All businesses profiled are examples of unified development, and all typify Hawken's dictum of product or service quality, knowledge intensification and responsiveness to consumer needs. The fifteen businesses include two guide outfitters, a game rancher, a construction company, a moving company, a northern cooperative, a car dealership, a resort/marina complex, a computer store and newspaper publisher, a delicatessen, a convenience and magazine store, a grocery /restaurant /laundromat /consulting business, a small motor repair business, an Inuktitut/English translation service, and a northern airline. They range across the Yukon and Northwest Territories and include both the goods producing and information and service industries. Ideally this case study book will aid distance educators in promoting entrepreneurship in small remote communities and provide role models for students to think about.
Ms. Wuttunee will spend two years providing follow-up seminars to community college audiences and high school student groups. She will participate with three to five aspiring northern entrepreneurs in the development of sustainable small business plans.

The above project grew from many personal expressions for northern course content and hands-on advisory services in the very inter-disciplinary field of community economic development, and from an equally strong conviction (Robinson, 1990:87-89) that government employment role models and high starting salaries are stifling the process of northern entrepreneurship.

The experience of the Arctic Institute, Teetl'it Gwich'in Band, Government of the Northwest Territories Department of Education joint venture, the Gwich'in Language and Culture Project, has also reinforced our basic belief in the method of participatory action research and the role community researchers can play in community development generally (Ryan and Robinson, 1990). The Gwich'in Project has trained six Fort McPherson adults in basic Gwich'in and English literacy, anthropological research techniques (key informant interview and participant observation), primary curriculum design, word processing, basic accounting, public speaking, and land use mapping. These achievements were accomplished in a two year course developed in Fort McPherson under the guidance of Arctic Institute sponsored research associate Joan Ryan. Dr. Ryan's presence in the community as a full time resident, and her commitment to leading from behind and progressively working herself out of her job, have once again illustrated the need for a special personal approach to adult education in small northern communities. This work is developmental at its heart, and requires a strong conviction by adult educators that community adults can take control of both their education and their projects. It is not suited to educators who relish continuing control, specialist status or flying in and flying out during the educational process.

The recent Arctic Institute experience argues for a personal, on-site and nurturing approach to distance education when community empowerment is a primary goal. While the Gwich'in trainees have increasingly taken control of the work plan of the Gwich'in Language and Cultural Center, they have done so with the active encouragement and support of their coordinator. It is doubtful if the success of the training phase of this project could have been duplicated with a teleconference link to the coordinator and fly-in tutorials twice per month. In both the Sustainable Northern Small Business Project and the Gwich'in Language and Cultural Project, the Arctic Institute has learned the value of working with local experience and traditional knowledge. We have placed our faith in the capacity of northern adults to educate their peers both directly and by example, and ultimately to take control in the areas of entrepreneurship and language and culture. The Arctic Institute's role has been one of providing provisional research support and demonstrating and reinforcing the inherent wisdom of the community. While we have not been distance educators in the classic sense, we have contributed to the creation of community foundations that must first be in place for distance education to function.

Conclusions

In this essay we have ranged over the topic of sustainable community development and concluded that above all it must be unified, that is it must combine the traditional economic criteria for success (profit generation and employment), with a fusing of community and corporate culture and a strong applied ethic of environmental stewardship. In addition, successful sustainable community development must be mindful of the quest for the well-lived life. As we have seen, there is now interesting evidence linking this quest to a new economic and social contract amongst worker, employee and government—one that stresses self-esteem, self-reliance and local control and as a result is not stressful! We have also noted that the best writers on the topic of sustainable development have direct experience of what they describe. They are collectively thinkers and doers. In the all-encompassing sense of the term they are participatory action researchers.

The link between sustainable community development and distance education, at first tenuous and slippery, has led us to consider the struggle for self-reliance in small northern communities. Beset by external economic market realities and the increasing litany of externally introduced environmental problems, these communities are ripe for local empowerment. In the Arctic Institute's experience both locally developed curriculum materials and community-based adult education programs are means to the end of sustainable community development. To ensure the attainment of this goal in the North, however, we need to develop, fund and nurture distance education programs that are both empowering and unified. We need to educate for self-reliance.

Finally, we need to admit that the emerging environmental crisis is the end product of a synergy between science and technology that has its roots in the western orthodox Christian arrogance towards nature. As White (Science, 1967) pointed out, we need a new set of basic values. It is impossible to predicate sustainable development on the spiritual ethics that underwrote holes in the ozone layer, global warming, and cultural genocide for aboriginal people. We need to revisit and learn the principles of stewardship. We need to hear again and this time heed the words of aboriginal stewards like Sitting Bull:

> Behold my friends, the spring is come; the earth has gladly received the embrace of the sun, and we shall soon see the results of their love! Every seed is awakened, and all animal life. It is through this mysterious power that we too have our being and we therefore yield to our neighbors, even to our animal neighbors, the same rights as ourselves to inhabit this vast land.

Yet hear me friends! We have now to deal with another people, small and feeble when our forefathers first met with them, but now great and overbearing. Strangely enough, they have a mind to till the soil, and the love of possession is a disease in them.... They claim this mother of ours, the Earth, for their own use, and fence their neighbors away from her, and deface her with their buildings and their refuse. They compel her to produce out of season, and when sterile she is made to take medicine in order to produce again. All this is sacrilege (MacEwan, 1973:210).

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Trends and Issues in Distance Education with Implications for Northern Development

Margaret Haughey
University of Alberta

Trends in distance education are influenced by changes in the larger society, hence, the trends discussed in this paper are as much societal as specific to education. There are six trends which I think have implications for Northern development and two issues which we need to discuss. The trends are a reflection of the growing interest in society in equality for individuals coupled with an acceptance of the relativistic nature of knowledge. They also reflect two other developments of which I'm sure you are already aware; the growing sophistication of the telecommunications industry and the increasing concern for efficiency in the business sector as we see our position on the world market slip. When these general perspectives intersect, new ways of seeing the world, alternative possibilities, are envisaged. These are the trends I want to discuss and since trends in their turn embed particular epistemological stances, there are some issues which need exploration.

Open Learning and Greater Access

In business and industry today, strategic rather than long range planning has become commonplace. Business people recognize that in the complex marketplace, strategic planning is necessary and the forms of business and the models of production which worked in previous years are no longer as

applicable for today's volatile market. This was certainly the message from Peters and Waterman's "In Search of Excellence" and the notion behind the Japanese innovation, quality circles. Both strategic planning and quality circles stress the involvement of employees in helping determine how a work unit can best function to be efficient and effective. To be able to participate fully in an organization, employees need to be kept informed about the organization and its priorities and they need to be skilled in what they do. This means regular opportunities for the up-grading of skills since in these tight economic times, the work of every employee contributes to the effective use of scarce resources. This has posed somewhat of a conundrum since time taken away from the job for skill development while ultimately beneficial means an immediate loss of production. This is especially so where trainees have to travel to centres for such inservice training. The trend has begun to bring learning to the workplace thereby providing greater access through open learning.

Among distance educators, the same emphasis on increased access underlies the current discussions about distance education and open learning. One trend in distance education is towards providing access to formal learning at work as well as at home. Learning is not viewed as something done apart from work. Rather, these specific training opportunities encourage integration of knowledge through the immediate application of the skills in relevant work settings and reduce time spent away from the workplace.

One example is the British Open University Training Program with Business and Industry. (I think there is are similar initiatives underway in Canada, e.g., at Open Learning Agency). In the British initiative, which is similar to that adopted for a time by the now defunct Open Tech, personnel from the university and the participating industry or business discussed their training needs and devised ways to satisfy the concerns of management given the constraints of the workplace and in recognition of the concerns of adult learners. These programs, which varied greatly in time and content from, e.g., underwater technology for oil-drillers to a certificate program for quarrymen, are not an add-on to the duties of employees. They are supported by the employers and require commitment and support from the employers if they are to succeed.

Closer to home, I teach a distance education course in High Level, Alberta, a community about 500 km northwest of Edmonton, as part of a Masters in Education program. Once, as I was returning on the plane from visiting my students, I was intrigued by the activity of a man opposite who was busy reading and writing in what looked suspiciously like a distance education module. Upon enquiry, he told me that he was employed by the justice system

and was working on a distance education module which, with some class sessions, provided him with in-service and an opportunity for advancement. He was enjoying studying it this way especially since he travelled a lot. Such situations are becoming more commonplace in Canada. The trend is to integrate work and study rather than to separate them by opening up learning opportunities and providing greater access to learning.

The implications for northern communities are clear. In a vast land area with scattered settlements, the emphasis should be on the development of educational opportunities which support and sustain employees in their local communities. Not only would this reduce the cost of travel and dislocation, but it would also legitimate learning in the workplace.

Widening Opportunities and Greater Equality

Besides linking the workplace and education, another trend in distance education is the move away from a predominant focus on university degree completion credit courses to more emphasis on a greater range of opportunities; in particular adult literacy, school completion and technical and vocational courses both credit and non-credit. In a review of distance education in schools across Canada in 1990, I noted that adults are the major clients of correspondence programs and that the range and variety of courses presently offered especially in Grade 12 and first year technical and vocational courses are much broader than was true previously. In Ontario, over 57 000 adults registered for correspondence courses with the Independent Learning Centre in 1987/88 and enrollments have now climbed to over 70 000. In Alberta over 14 000 adults register annually for courses from the Alberta Correspondence School. Incidentally, in 1989-1990, over 180 distance education courses were offered at community colleges alone in Alberta. Similarly at the school level, the requirements for the Grade 12 credential, the expansion of knowledge and the concomitant shortage of qualified teachers has led to the expansion of distance education as part of the educational opportunities for school-age students. All of these initiatives also provide for greater equity in education.

In terms of northern development, the provision of a wide array of educational opportunities which help expand the knowledge base of the community are all important for sustainable development.

Personal Meaning and a Redefining of Knowledge

In education in general, this trend is evident in the way "knowledge" is being re-examined. Formerly we tended to view knowledge as a product; now we emphasize the importance of the individual in the attribution of meaning. Knowledge is not out there, given, transferred from teacher to learner but is constructed by the learner as he or she attempts to make sense of the situation and give it meaning. We also now recognize the important influence of prior experience in this process. It is not enough to design instruction in which learners are told what they need to know; we now have to include more opportunities for learners to graft what they are learning to their own experience and also opportunities where they bring forward that experience for scrutiny and possible change. We have to recognize what learners already know, and also reconsider whose knowledge is of most worth.

One example of this trend in distance education is a program for social workers offered by Deakin University, Australia. Participants are asked to write up their experiences in selected topic areas. These writings then become part of the literature base for the course, thereby stressing that knowledge is not confined to that of the instructor or that provided in library references but includes the experiences of practitioners. Many Canadian examples of community development include a recognition of the importance of understanding the individual meanings of people through the sharing of information. One project, People Talking Back, a collaborative venture of the Canadian Association for Adult Education and the CBC, involved the use of television programs and studio sessions with members of the general public to raise awareness of issues associated with the Constitution. In the fifties, a program series from University of British Columbia's Centre for Continuing Education used audio-tapes, films and books to provide the focus for local discussion groups led by a trained facilitator. It was called Living Room Learning. In distance education, the trend has led us to reexamine how learning opportunities are designed.

In northern development, we should be prepared to learn from the learners about the knowledge which they see as most worthwhile and helpful to them in their own communities and help them develop suitable distance education opportunities which reflects this knowledge.

Ways of Knowing and Learning

Closely related to the previous trends is a stress on 'ways of knowing.' Increasingly learning theorists are stressing that 'learning how to learn' is the most essential skill for life- long learning. We have moved from an emphasis on behaviorist to cognitive and social-psychological theories of learning and to a recognition of the importance of these macro-learning strategies. We see this in distance education in an increased emphasis on learning styles, on the use of more graphics and diagrams, more points of entry to the materials usually through modularization, more overviews and synopses for the holistic learners, more activities to encourage active learning. There is also a recognition of the need for multi- media to enhance opportunities for learning.

One example where an attempt was made to match the learners' preferred learning strategies with an appropriate distance education format was in a recent proposal to the Ministry of Education in Singapore. In that country, there is a high rate of underemployment because so many of the unemployed lack the most basic work skills. The proposal suggested that the best way to reach these people was to build on the importance of the television "soaps" which are watched by millions and are a regular topic for discussion in casual conversation. By designing a soap story which included information and experiences involving work habits and skills it was hoped to capture the attention of those who most needed the training but who were uncomfortable about attending classes. An optional cartoon booklet and information pamphlets would provide further information instead and could be used to further informal learning. We in education can learn from industry that diversification of sources leads to better saturation of the market! I can't tell you whether it worked or even if it is being implemented although I recall but cannot verify that a similar idea using radio instead of television was used in an adult literacy project in Canada .

In northern development, the challenge is to provide educational opportunities which not only match the lifestyles of the participants but also encourage them to expand the ways they come to know.

Interactive Technologies

A general societal trend is towards increased use of computers at home and at work. As technologies enter the general marketplace they are absorbed into the possible repertoire of tools for the distance educator. Since video recorders (VCRs) have become commonplace more courses are including them as one of their media options. Video-conferencing using compressed

video—that is via telephone lines—will compete with computers as the preferred interactive medium. Part of the reason is the expansion of the technology but another is the emphasis on interactivity. Technologies which provide opportunities for interaction whether it is audio-, video- or computer-conferencing are all welcomed by learners as ways to talk to each other.

The importance of interactivity in learning is a position already espoused by many distance educators. One example where students also recognized its value was in the Distance Learning Project North school project in Northern Alberta where, on their own initiative, students from a number of the participating high schools got together by audio-conference to discuss ideas for up-coming social events at their schools. We are increasingly familiar with satellite video-conferencing where professional programming in business and industry are provided to local sites. Participants from local groups view the one-way video signal and can interact with the presenter and other groups via audio-link. In a recent video-conference using compressed video, part of a course on Slavic Literature was taught on two university campuses at once. The professor was in Edmonton and students were at the University of Calgary site. Neither the instructor nor students were inhibited by the medium but instead took full advantage of its interactive capabilities. Recent initiatives in Eastern Canada are using a similar format. Another example would be the use of computer conferencing to allow students to converse on topics although living miles—kilometers—apart such as has been done successfully at, for example, Ontario Institute for Studies in Education, Waterloo University, McGill University and various universities in England. I think the trend is to greater use of interactive technologies.

For northern development, educators have to be prepared to make use of telecommunication opportunities and to experiment with them to strengthen the linkages among instructor and students without replicating the traditional power structure.

Conversation and Dialogue

As a corollary to the development of interactive technologies, much more emphasis is being given to conversation, dialogue, talk. There is more recognition of the fact that most adults involve others in the educative process—friends, family, work mates, as Tough's work on adult learning suggests. As well we have more understanding that, in learning, while we may talk things through in our heads, we also benefit from having to articulate and support our ideas and withstand the critical appraisal of our peers.

There are many examples where distance education and community development have stressed the importance of discussion as an aspect of learning. The University of Victoria has made videotapes of discussions with provincial native leaders after each of the constitutional meetings on aboriginal rights and titles. These videotapes in turn became the catalysts for discussions among local groups who viewed the tapes via VCR and then continued with their own discussions and reactions. In a similar way, the Challenge for Change NFB film documentaries which were seen by over 14 and a half million Canadians in 1955-56 were used to encourage discussion on health, labor, social, cultural and economic issues. National Radio Farm Forum, begun in 1941, used prepared brochures and pamphlets, radio broadcasts and living room discussion to examine questions of provincial, regional and national interest. A final and excellent example is the work begun at Memorial University in the 1960s to encourage discussion of topics in local communities and then to link together communities and, for example, a federal minister, on the issue of fisheries. Alaska also uses audio-conferencing to link legislators with their constituents. The advantage at Memorial University is that people come to the issue informed.

For northern development, distance education is both a medium and a message. The message is that we, the North, define ourselves in the process of becoming who we wish to be. Hence, the educational opportunities we support speak as much about whom we wish to become as about where we are.

These six trends chosen from many possible are not discrete. The trends towards open learning and greater access and towards wider opportunities and greater equality suggest that distance education can now contribute to learning on the job and that the variety and number of opportunities are expanding. The trends towards more emphasis on learning strategies and learning styles will lead to greater variety in the design of print and non-print materials and in the mix of media. The last two trends on interactive technologies and conversation highlight a greater interest in learning as more than the transmission of content. The two issues which I wish to bring forward are not yet trends but they are important not only in distance education but also in the more general context of society. They are the development of community and the recognition of the ethnic, political, historical and gendered context of learners.

Issues

The first is the need to place more emphasis on community--the community of learners with whom we converse. Previously we have emphasized learners' busy work life, the problems of combining working and studying, the compressed study time, the effects of fatigue, but we have tended to ignore that learners live in a particular place and time and come with a particular past. We have stressed overcoming isolation, the "loneliness of the long distance learner". We have failed to recognize the ways in which our emphasis on our way of structuring the world affects their ways of knowing and the value they place on knowledge. We tend to see learners as individuals instead of recognizing that education has a political and social focus as well as an academic one. One example which highlights what is possible is the development of the Wahsa Distance Education Centre in Northern Ontario. Here a concerted attempt has been made to provide continued community support for young learners and to confirm for the learners that the community respects their activities and encourages them to do well.

Besides the recognition of socio-emotional support for learners we have to recognize their historical and political context, their gender and ethnicity. Let me give a couple of examples: Pat Nelson in reporting the results of a study on telecourse students completed at Anchorage College commented: "Cultural values and ways of knowing also need to be seriously considered in determining the role of the student in distance delivered courses . . . Some students tend not to speak up on audio or teleconference and may not be comfortable when called on to do so." This difference was also highlighted for me in discussions with an instructor about a telecourse. She had become aware that students in the main classroom who pressed the response button and then thought of the answer while she was choosing the person to respond were given preference over those who thought of the answer first and then indicated their readiness to answer, a point exacerbated when one classroom was "invisible" to the instructor. In a cultural context which stresses approximation or 'trying' as a legitimate way of coming to know, those who work through the answer first to be certain that it fits within their knowledge base, can be viewed as hesitant and unsure, rather than as people who have given more thought to the question than those whose hands shoot up swiftly.

Nelson also recalled that one student wrote that she paid more attention to the male presenters on the videotape because "males have more important things to say" in a course in which the main presenter was female. Although we talk about inclusive language we don't always explain why or use it ourselves in our discussions with students. I'm sure you can think of many examples to relate.

How often in setting the administrative deadlines for courses do we take into consideration the rest of students' lives? I'm reminded of Barbara Spronk's research on the learning strategies of some native women taking Athabasca University courses and the endless games of catch-up imposed on them because they put aside their academic work to travel to and participate in family gatherings, a necessary and cherished part of their culture.

I have only referred to cultural and gender contexts but these are important issues which we need to explore.

Distance Education in Northern and Remote Communities: Understanding Social Networks, Change, and Process

Richard D. Hotchkis and Linda Driedger
Athabasca University

Abstract

This paper examines and critiques individualist assumptions underlying distance education. The research on educational success is discussed and criticized for lacking perspectives of social process. The importance of a qualitative perspective is emphasized. Characteristics of remote communities and the role of distance education are discussed. Based on student-in-community perspective, suggestions are put forward on the way distance education institutions can better serve remote communities and the individuals residing therein.

Introduction

Communities, families, individuals and their relation to distance university education are the focus of this paper. Strange though it may seem, communities and families are seldom mentioned in distance education literature.[1] There are, however, notable exceptions (Spronk and Radkte, 1986: Paulet, 1989). Most attention is paid to individuals, their needs, motives,

learning styles, study strategies and so forth. Distance education seems to have been created for 'Today's Individual'; an individual, who is self-directed and completely responsible for his/her own learning and his/her own success. Many claim that distance education holds the key to greater individual success and fulfilment. Since distance education has broken down the barriers of time and distance, nothing should stand in the way of individual academic success. We reject this blanket of individualism that has been draped over distance education. Though some may use distance education in an individualistic way, there is no *a priori* reason to limit our understanding of distance education in this way.[2]

Researchers, as well as administrators, often assume homogeneity among potential client groups: that is, given the opportunity, individuals would "naturally" want a university credential. A degree is frequently viewed as a high personal achievement. The desire for academic credentials is thought to be omnipresent and universally valued. Academic credentials boast both social and economic benefits for all (Collins, 1979, 1989). The desire for academic credentials is thought to transcend all social segments and all family and community settings. These assumptions are questionable, constitute a psychologizing of individuals, and suggest that individuals can be understood in isolation from their social context. We disagree. We argue that reductionism distorts social reality and serves only to fragment further our knowledge of the social foundations of education and learning.

The "distancing" aspect of distance education, the tendency for distance education to separate students from their social context is considered by Boyd (1988) who argues that: "distance education frequently seems to the student as though it is a connection to another world, in some sense a higher and better world." (p. 125). Later he reminisces that his childhood correspondence course "was an escape and a catalyst enabling me to mobilize part of myself that otherwise would have been held in suspension or might perhaps have atrophied." (p. 125). There is a geographic distancing due to the postal or broadcast media and social distancing from the world of school or university life, as well from the daily family life and routine of work a day world. From both sides one can say to oneself: "I am in this world but not of it!" (p. 125).

Undoubtedly, many distance education students share similar experiences. Indeed, it is likely that many share the desire for escape or distancing from their social contexts. However, others who enroll in educational programs do so because they receive support and understanding from those who are close to them. Our contention is that for students to be successful and persist in their studies, the support of kinship and community networks is crucial. This is important particularly for tight-knit communities, whether they be remote

northern hamlets or in other culturally distinct settings. To properly understand these social networks and culture, the choice for a qualitative research methodology is critical.

Educational Success: Institutionally Measured, Individually Experienced

In discusssing educational success of distance university students residing in remote communities, it is useful to give an overview of research about success in university education. Individual success is important in so far as it represents a measure of institutional success. Success, in the eyes of educational institutions, is often measured in the number of degree programs offered and in the numbers of students completing these programs. For non-traditional institutions such as Athabasca University (AU), educational success is measured by 1) the number of students who complete a course, 2) the number of students who return to take subsequent courses and/or 3) those who successfully graduate. Persistence in course taking behavior is often synonymous with success. On another level, institutional success is judged by the rigour of its courses; that is its ''academic excellence''. These measures, apparently contradictory, are simultaneously used for different purposes. In each case, the actual learning and experience of the student remains irrelevant. ''Success'' in the institutional sense far too often has nothing to do with quality of education. ''Success'' is a numbers game.

Universities have addressed the problem of ''success'' or persistence by preventing students from dropping out. Administrations seek solutions to the serious problem of student dropout as dropouts constitute a potential threat to sources of tuition revenues. Therefore, it is not surprising that factors that influence success or dropout comprise central questions addressed by many researchers (Bean and Metzner, 1985). Factors identified as correlating with dropout and persistence include background characteristics such as gender, age, and prior education. At best, the cumulative evidence has been fragmented and is difficult to interpret. Some of the more convincing factors for persistence in traditional institutions of higher education have been identified as academic and social integration, commitment to the goal of achieving a degree and commitment to a given institution (Tinto, 1975; Bean and Metzner, 1985).

In traditional college or university education, social integration refers to the process whereby individual members of a group exchange information, and share feelings, attitudes, and values. According to Tinto (1975), the more students are integrated within student life, the more likely they will share the commitment to the goal of completing their studies. Academic integration

refers to the degree to which students accept and perform according to the academic standards of the institution. The more students are integrated socially and academically, the more likely it is that they will persist in their studies. Social integration relates to Durkheim's notion of social cohesion or moral solidarity where individuals interact in social groups and develop a common morality and purpose in life (Tinto, 1975). Although this model is appealing, it views students as comprising a monolithic entity and ignores other social groups wherein students interact; e.g. their families. Tinto views social integration as little more than the way students accept the values and conform to the behavior patterns of the student group. It ignores other social relationships that might explain differing degrees of interaction between students, and how they relate with non-student groups (Bean and Metzner, 1985).

Distance Education: Student Success

In distance education, similar factors play a role. However, distance education necessitates a different approach to conceptualizing success. Distance education is characterized by the fact that students are separated from the production of knowledge in time and/or in space. Students may not come to a centralized area to receive instruction but generally receive materials that they study at home in private. There are many variations on this theme and distance education institutions are also known to deliver lectures or tutorials in classroom settings. The only thing that makes these classroom courses still "distance" is that they focus on materials developed elsewhere.[3]

Thus, in distance education, where students study alone, Tinto's concept of social integration is inadequate. Social integration, as measured through peer interaction, scarcely exists in distance education and can not adequately be used to explain persistence. There is contact between the telephone tutors and students but this is a restricted and variable social relationship. It is restricted by space and the evaluation role of the home-study tutor, and is variable regarding tutoring styles. The only face-to-face types of "social integration" for the distance student are the ones they find in their normal social environment—their home, work, and circle of friends and acquaintances. One would suspect that this is particularly the case in remote communities where community interaction is more common than in urbanized areas (Hodge and Qadeer, 1983).

Methodological Perspective

Educational research often ignores the fact that education is a *social* process. All too often, factors and variables are arranged in neat technological configurations used to predict or explain persistence and "success". Despite their mathematical prowess, most studies of success show statistical "explanations" and "interactions" of aggregate factors but fail to acknowledge the process of human interaction and meaning at the community level. The data of many studies is obtained by impersonal and mass produced standardized "instruments". Though expertly analyzed this aggregate data often leaves us with sterile and static depictions of reality. For all its sophistication, it misses the reality of people in their day to day lives and their 'learning for life'.

In our view, process, tension, dynamic interaction, flow, conflict and change are the essence of education and social life. Personal change as a function of distance education not only affects the individual student but also profoundly affects their families, friends and communities (Hotchkis and Nelson, 1988; Nelson, 1990). Dialectic change affects professors, tutors and students alike. It is not something abstract but is there for those who care to look.

Our basic perspective is that people's behavior, thoughts and emotions are influenced by the groups and culture wherein they belong or wish to belong. Our sense of self-satisfaction, intentions and motivations with regard to social goals, arise from comparisons and negotiations we conduct between ourselves and others. In a more profound sense all our perception and knowledge is based on contrast and comparison. These comparisons underly our motivations to achieve status qualifications within our own group, or to pursue qualifications that would allow us to emulate and perhaps become members of other groups.

Individuals can best be understood by coming to grips with how they compare or relate themselves to other groups and other sets of ideas and values. University education, of any sort, can be viewed as an increasingly important mechanism for individuals to attain credentials that allow one access to employment and social status (Collins, 1979). In a very real sense the university functions for many as the 'dream machine'. That is, it provides them with the means to *become* a member of the status group, or the type of person, to which they aspire; thus making dreams reality. The interaction between the individual and community, the strength of the students' desire to emulate a certain comparative reference group, and sense of the feasibility of attaining university credentials combine to influence the student to persist or dropout, to change or remain the same.

Distance Education and Remote Communities

In the preceeding discussion, we have sketched a picture of research about success and dropout in traditional and distance education and have argued for the use of alternative, process oriented models for education. Now, let us turn to the issues concerning distance education in remote communities.

We do not suggest that rural or urban people are more or less likely to participate in distance education, or that one group is typically more "successful" than the other. We would be hard pressed to establish either point. The proportion of rural students studying at AU is approximately the same (32%) as the proportion of rural inhabitants of Alberta. As far as their performance is concerned, there is little if any difference between rural and urban students.

However, we do want to stress the subtle differences in social and cultural conditions in remote communities. We will discuss how people cope with their education and their social environment in different ways. If we want to better serve individuals in the rural community a more in-depth understanding of the social reality of remote communities is essential. However, it is important to note that there is no clear cut division between rural remote communities and urbanized settings (Hodge and Qadeer, 1983). It is more a difference of degree. What applies to the rural remote student may also apply to the urban student.

Within the rural student's social context there may be differential support for their studies. Some students find that obtaining higher education is threatening to family and community, and thus find their course work unfeasible and decide to stop. Some students decide to cut ties or alter relationships with spouse, family and friends to continue their education. The cutting of ties in a small rural community has far more radical consequences than in an urban setting where one can fairly rapidly change one's social circle. Precisely because of the strength of the ties in small towns, participation in activities that may weaken these ties, for example by creating increased social distance, bring negative sanctions (Walker, 1984). Post-secondary education may be viewed negatively. The ability to cope with the possible negative sanctions towards higher education, may thus be viewed a core skill for many individuals in tight-knit communities (Clarke, 1990). This would, due to the extent and nature of the social ties, occur more often among those in remote communities than among those living in urban centres (Walker, 1984). After all, interdependence and sense of belonging to a community are as much a characteristic among rural communities as

independence and autonomy are cherished among urban dwellers (Conboy and D'Cruz, 1988).

Still others may find strong support among their social networks. In short, education (for the purpose of credential or change) has social consequences - not all positive. Students, who are taking university courses for personal development and change, may be viewed by their traditional family members as threatening. In addition, they may face ridicule from other community members. The positive or negative factors are rarely constant. While some students may have support at the beginning of their studies, this support may evaporate. Conversely, other students as they progress through their studies may enjoy ongoing and increasing social rewards from their communities and therefore find their persistence reinforced.

In more traditional forms of education students study and socialize in groups. In distance education, the collectivity of the student group is absent. (The exception to this is in the decentralized local classroom seminar delivery mode.) Students study individually, often studying at great distance from where the course materials were designed and produced or where other students reside. Students cannot find assistance from each other to aid them in their newly found identities as students or to support them in their goals. The lack of student groups means that individuals have less of chance to share and make sense of their educational experience.

Finally, it is important to note that education, or at least its outcome, may be viewed as threatening by small remote communities. If one wants to seek employment at a level commensurate with the education that one has achieved, it is probable that one will have to leave the community to find appropriate employment elsewhere. Geographic mobility in urbanized society is an assumed prerequisite for career advancement. The threat of loosing the community's brightest and best is understandably a serious one (Conboy and D'Cruz, 1988).

Understanding students, their culture and their communities have obvious policy ramifications. Programs such as management certificates, health administration certificates have been developed to fulfil, at least in part, the stated needs of rural, remote or culturally separate communities. But to find flexible policies that will adapt to social and cultural context of these communities will be a challenge to distance education administrators in their advance to the north. Researchers who are involved in producing knowledge for decision makers and who are interested in education in remote communities, should anticipate the need for a qualitatively deeper understanding of the communities targeted for educational development.

Numerous techniques, theory and analytical methods are available for those who wish to follow this path. One thing is certain, if administrators believe that understanding their students will help them deliver better distance education programs, then a qualitative, process oriented approach to unveiling the life of their students in their day to day social context will be a necessity.

Footnotes

1. When we speak of distance education in this paper we are specifically referring to university level education delivered at a distance.

2. Distance education has been successfully offered, for example through seminar delivery to groups in close communities for numerous years at Athabasca University. Seminar delivery refers to that mode of delivery where students receive 3 hours of face-to-face tutoring once a week for 13 weeks. The tutor/instructor leads the group in review of the weeks material, answers questions, and stimulates discussions. Also, distance education through home study frequently involves whole families and friendship networks.

3. This is of course a heuristic description of distance education.

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Commonwealth of Learning and Distance Education

Hafiz Wali
The Commonwealth of Learning

The decision by the developed members of the Commonwealth (Britain, Australia, New Zealand and to lesser though still significant extent, Canada) to charge all foreign students "economic" fees resulted in a considerable decline of intra-Commonwealth student mobility. For example the number of students from Nigeria in British universities decreased from 1505 in 1979/80 to 872 in 1989/90. From the three other Commonwealth West African nations—Ghana, Sierra Leone and The Gambia—the number fell from 502 to 367. In Canadian universities, the number of Nigerian students fell from 688 in 1978/79 to 260 in 1989/90. Most Commonwealth developing countries recorded similar decreases. Although these numbers may appear insignificant compared to the total university student population of the developing countries, the subjects these students usually pursue overseas, if given the chance, are often crucial to the developing nation's development priorities. After completing their studies, most such students returned to teach in the universities or to be involved with key government activities.

The new fee patterns affected both undergraduate and graduate students, and this at a period when the demand for higher education was growing beyond the means of most of the developing nations. Again some examples from Africa might serve to illustrate the point. In Kenya, "despite an increase in the number of universities from one to four, only 30% of those who qualify

gain entry'' into universities. Between 1978 to 1987 of the over 1.9 million students qualified to enter Nigerian universities, less than 200,000 gained entry.

Establishment of the Commonwealth of Learning (COL)

Recognising the continuing deterioration of Commonwealth student exchange and interchange, the Commonwealth Secretary-General in 1981, set up a Standing Committee on Student Mobility, to examine the matter and to present reports to meetings of the Commonwealth Ministers of Education. As a direct result of the problems highlighted by the Committee over the years, the Secretary-General appointed an expert group, chaired by Lord Asa Briggs of Lewes, to study the feasibility of establishment of a higher educational institution (that was later designated as ''The Commonwealth of Learning''), to address and partially alleviate the problems of educational access within the Commonwealth. The Heads of Government Meeting in Vancouver in November, 1987 accepted the report. Canada offered to provide a home for the new organisation, and Vancouver, B.C., was chosen as its venue.

Aims and Functions of COL

The main goal of The Commonwealth of Learning (COL) is to create and widen educational access between Commonwealth countries through distance education methods, and by the application of the new information and communication technologies. A Memorandum of Understanding signed by the member countries of the Commonwealth lists the following eleven operational objectives for COL:

1. Assisting the creation and development of institutional capacity in distance education;

2. Facilitating the channeling of resources to projects and programmes in distance education;

3. Providing information and consultancy services on any aspect of distance education including the selection of the appropriate technology;

4. Undertaking and supporting staff training in the techniques and management of distance education;

5. Facilitating intra-institutional communication links;

6. Undertaking and supporting evaluation and applied research in distance education;

7. Assisting the acquisition and delivery of teaching materials and more generally facilitating access to them;

8. Commissioning, and promoting the adaptation and development of teaching materials;

9. Establishing and maintaining procedures for the recognition of academic credit;

10. Assisting in the development of local support services to students;

11. Stimulating and supporting any other activities that fall within the Agency's area of interest by such means as may be approved by the Board of Governors.

(The word Agency in #11 above is not a description COL's status. Its usage arose from the legal requirements that accord senior members of COL diplomatic status in Canada.)

COL Operations

In order to address the broad operational guidelines above, and working within the functional areas identified earlier, The Commonwealth of Learning has undertaken several activities within many Commonwealth countries. In training, for example, a Round Table was organised in Vancouver between 2-6 April, 1990 with 12 participants from many Commonwealth countries. A central recommendation of the Round Table was for regional workshops for "the training of trainers." Such workshops have since been taken place for the African Region in Swaziland; for the South Pacific in Vanuatu and for the Caribbean in Barbados. Another is scheduled for India in December 1991.

In Materials Acquisitions and Development, distance education materials have been sent from, for example, Canada to the Caribbean, from India to Kenya. Arrangements are at hand to send Open University (United Kingdom) and Open Learning Agency (British Columbia) materials to Nigeria. Accountancy materials produced by CPA will be available to the University of Swaziland to be used in partial fulfillment of a degree programme. The list is long and is

getting longer as more countries and institutions learn about the potential of COL to assist respective countries and institutions.

African Region

The sixteen Commonwealth member nations in Africa, that over the last decade have been hit hardest by the effects of recession, natural disasters and civil strifes, stand to benefit most from the activities of COL. I have already mentioned some of the benefits of training and materials acquisition activities that had occurred in the African Region. However, the main thrust of COL activities in the African region has been through expert studies which were arranged by COL at the requests of Governments and their agencies. These studies are mostly related to the establishment of new distance education activities or on how to improve existing programmes.

In West Africa, COL sponsored a Consultative meeting between the countries of the sub-region with the purpose of facilitating the exchange and sharing of experience between the countries, and identifying of national and sub-regional requirements. COL was also keen to improve cooperation between the countries. A major concern of all the countries that attended the meeting was the need to enhance the availability of teacher education by distance teaching methods.

One rationale for the establishment of COL was the realisation that several Commonwealth countries have developed distance programmes and acquired expertise that should be shared with other countries. The National Teachers' Institute in Nigeria has had over a decade of using distance education to train teachers. COL agreed to sponsor three professionals from The Gambia and Sierra Leone to visit the NTI. All the participants now wish to cooperate with the NTI to develop their own materials and one country wishes to adopt the materials already available from the NTI.

The National Teachers' Institute

Before taking up my appointment with The Commonwealth of Learning I was, for over 13 years, the Director of the National Teachers' Institute. I believe it will interest this meeting if I take up a little of your time to tell you about this Institute, the first of its type in Africa, and perhaps in the world.

In 1976 the Government of Nigeria decided to introduce the Universal Primary Education programme (UPE) At the time there were about 170,000 teachers employed by the country's primary schools. Over 54% of them did not possess the minimum qualifications required. Another 150,000 to 160,000 teachers needed to be trained to cope with demands of the UPE. To make matters worse, only two years were allowed between the announcement of the UPE and its implementation. Therefore the Governments of the Nigerian Federation embarked on massive emergency teacher programmes, some of which lasted for only a few months to meet the deadline set by the Federal Government. These added to the already unacceptable number of unqualified and underqualified teachers. Since so many untrained teachers could not be withdrawn from the classrooms, the only sensible solution was to devise a nationally coordinated distance education programme to upgrade in-service.

The NTI was created as the national centre for this programme. Given the scope and complexity of the task, the NTI decided to work through a network of field and study centres. A field centre was established in each of the twenty two state capitals (including the new federal capital at Abuja). A survey in 1977 provided the necessary information about the number of study centres, where they would be located and how they would relate to the field centre, the state Ministries of Education and the NTI headquarters in Kaduna.

The Federal Government provided seed funding that enabled the Headquarters to set up comprehensive printing and computer facilities. The figure attached shows the flow of activities both at Kaduna and in the field.

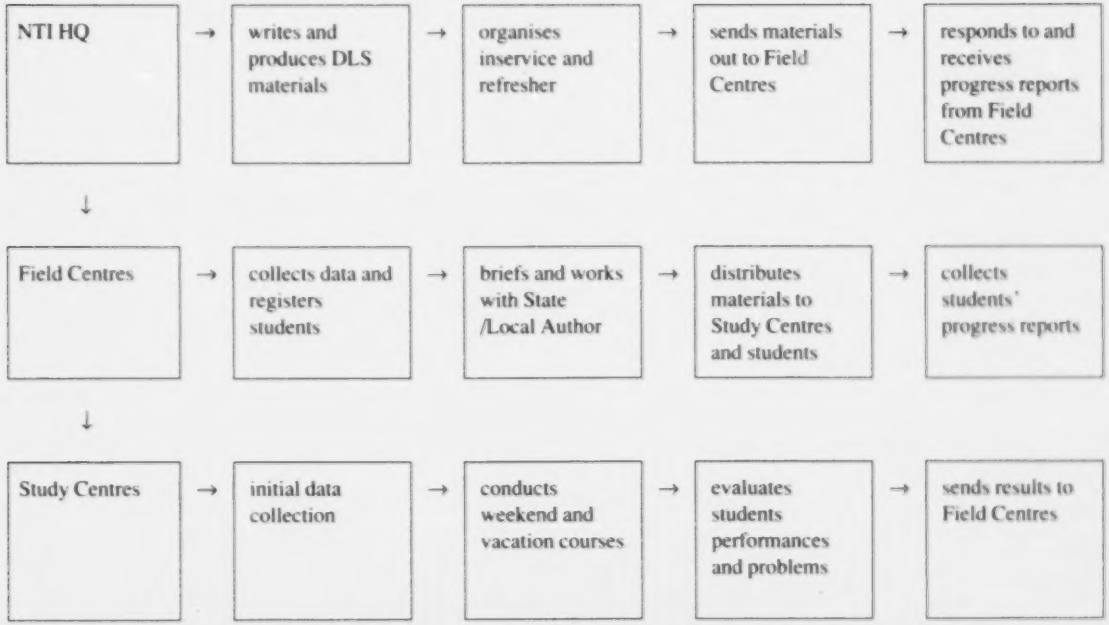
NTI programme has been a great success. Figures released recently (1989) showed that between 35,000 to 45,000 were enrolled annually since 1984. Some 186,000 students benefited from the programme, about 75,000 of whom were successful in obtaining the required qualification. This record has led the Government to assign new responsibilities to the Institute. These included the conduct of national teachers examination; the registration of all primary and post primary teachers in the country and recently, training of teachers at a higher level to enable Nigeria to extend its basic education programme to nine instead of six years.

My experience as the founding director of the NTI has convinced me of the viability and relevance of distance education to Nigeria's national development efforts. My more recent employment and responsibilities provide opportunities for me to widen my horizons and to learn about other programmes in the Commonwealth. That is why it is a great pleasure and privilege for me to be invited to participate in this conference.

National Teachers Institute's Headquarters Activity Flow

This is not a departmental organogram but an activities flow diagram.

NTI Field Network and Activities Cycle


NTI HQ
writes and produces DLS materials
organises inservice and refresher
sends materials out to Field Centres
responds to and receives progress reports from Field Centres
Field Centres
collects data and registers students
briefs and works with State /Local Author
distributes materials to Study Centres and students
collects students' progress reports
Study Centres
initial data collection
conducts weekend and vacation courses
evaluates students performances and problems
sends results to Field Centres

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The Role of Adult Education in Assisting Sustainable Development in Remote Area Dwellers of Botswana

Johannes N. S. Mutanyatta
University of Botswana

Introduction

The paper provides information about the geopolitical and ecosystem position of Botswana. It also attempts to provide the discussion on the links between the sustainability of the socioeconomic environment of Remote Area Dwellers (RADs) and the actual and potential application of Distance Education to non-formal education. Case studies demonstrate the effectiveness of the presence and absence of both formal and non-formal education institutions and programme. Relevant recommendations are also made.

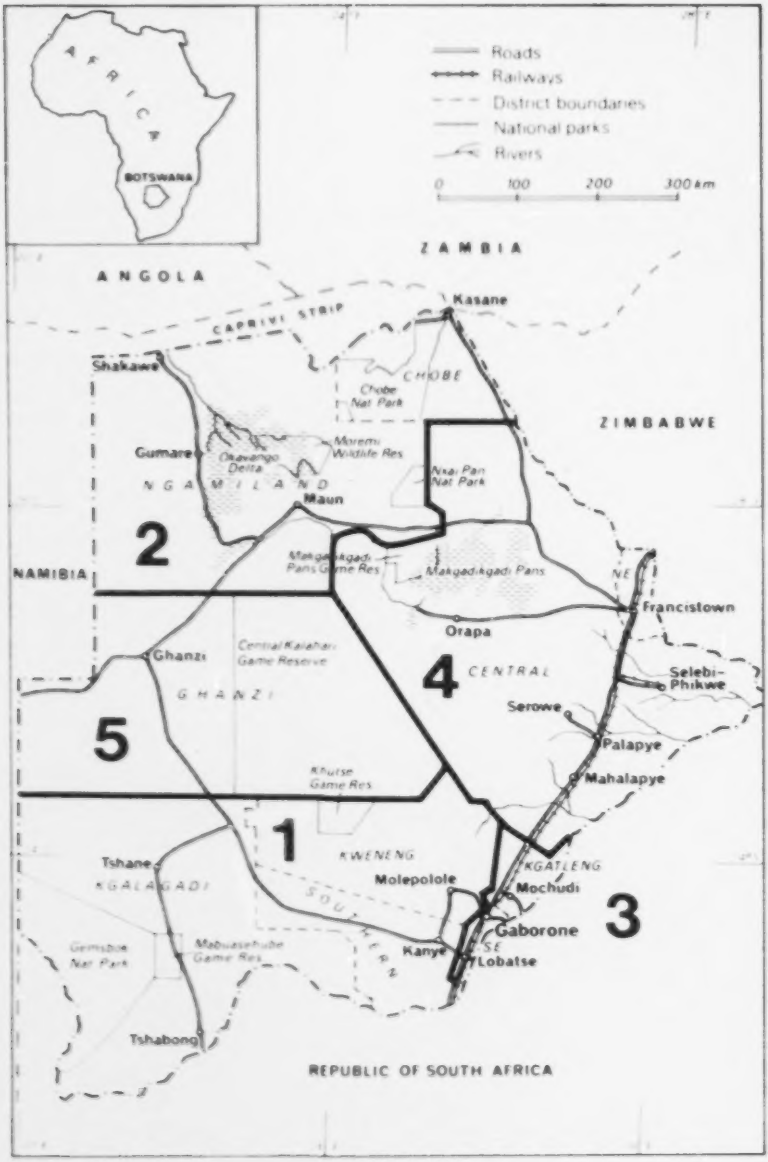
The Geopolitical and Ecosystem Position of Botswana

The map of Botswana shows the country's position in Southern Africa and the five main RADs districts. Botswana attained independence from the British in September, 1966. Geographically, the country is landlocked—located at the centre of Southern Africa. It shares borders with the newly independent state of Namibia, Zambia, Zimbabwe, and the Republic of South Africa.

Ecologically Botswana has gentle undulations and occasional rocky outcrops. The country is mainly arid and semi-arid characterized by extremely low irregular rainfall, occasional droughts (the recent one covered 1981-1986), high temperatures, absence of surface running water (rivers are mostly ephemeral), poor vegetation, and lack of tarmacked roads, especially to the remoter district centres. Currently government efforts are on providing a communication network to all parts of the country including RADs.

The rate of growth of the population is 3.4% per year (total population is estimated at 1.2 million), the highest in the African region. Settlement patterns show heavy concentration in the east where land and water resources are best. The population is predominantly rural (82.3%), with fast growing urban centres (with an economy fed by the diamond boom) and a thinly populated western country (covering Ngamiland, Ghantsi, Kgalagadi or Kweneng) that has an average density of 0.14 persons per square kilometer. This area constitutes 61% of the land mass of the country (582 000 km^2) but in the 1981 accounted for only 12.7% of the population as compared to a density of 17.2 persons per km^2 in the more populated eastern part of the country (NDR-6, 1985-91). RADs are predominately in the western part of the country and especially the Kalahari Desert.

Botswana



1 – 5 Remote Area Dwellers (RADs) Districts

The Socio-Economic Condition of Remote Area Dwellers

Definition and Criteria

Remote Area Dwellers (RADS) live a nomadic life-style. According to the Botswana Government recommendations and policies of rural development as well as policy in which all citizens have equal rights, Remote Area Dwellers have been defined by socio-economic and geographic criteria. The RADs are categorized as rural citizens who are the poorest of the poor; they live outside the traditional village structure in a geographic or socioeconomic sense; they tend to live in small communities (5-500 persons), reside far from basic services and facilities, rely heavily on hunting and gathering as source of livelihood, are generally non-livestock owners; they have no or inadequate access to the land and water; and they have no or inadequate access to extension advice and development information. Other characteristics include low levels of literacy and little access to educational opportunities; they often have another language besides the national language—Setswana—as their mother tongue; they are a silent sector politically and are the most disadvantaged groups in the country economically, with the lowest wage levels (Robert K. Hitchcock, 1989). In short, they have been marginalized ecologically, economically, socially and politically, even before the country regained its independence in 1966. For example, European settlers in the 1870's occupied the best parts of Ghantsi with surface water, thereby displacing the indigeneous people (Basarwa) who were forced into serfdom as the settlers established more cattle ranches.

Population Data for Remote Area Settlement by Location (District)

Table I shows population data for RAD by District

District	*Approximate No. of Settlements*	*Estimated Total Population*	*Persons in Each Settlement Range*
1. Kweneng Kgalagadi	38	1,928	13-167
2. North West Ngamiland	44	5,798	5-771
3. Kgatleng	5	679	24-250
4. Central	31	11,182	90-850
5. Ghantsi	13	5,209	202-791
Grand Total	131	24,796	5-850

Source: Estimated data obtained from various documentary reports i.e. Reports on monitoring Research and Development in RADs of Botswana: Robert K. Hitchcock, reports I + II, 1989.

The data in Table I need to be interpreted with great caution because: population data were based on 1981 census, and with a birth rate of 3.4% per year, the total population in RADs has increased greatly. The demographic data on RADs show a tendency to live in small settlements (range 500-850). The poorer sand soils are able to support RAD settlements of small population sizes. This is true especially in the Kweneng or Kgalagadi (Kalahari) Desert in which 35 out of 38 RAD settlements register population sizes of below 100 persons. In Ngamiland District (5-771), out of a total of 44 settlements, 26 or 59.1%, have fewer than 100 persons and only 5 RAD settlements have more than 300 people. The major issues are the absence of road communications to Remote Area Dwellers and their scatteredness.

Government Policy on RADS Socio-Economic Sustainable Development

Since independence, the Botswana Government has long been aware of the needs and difficulties of assisting those people living in remote areas. With its avowed rural development policies (1973) also enshrined in the Sixth National

Development Plan (NDP VI, 1985-91), the government founded the Remote Area Development Programme (RADP) in 1974. In essence the government policy on RADP is not to force these people to give up their traditional livestyle but to encourage them to intergrate into the national social, economic, and political system gradually and on an equal basis with other citizens. The question to be debated is how and with what results so far (especially functional education for modernising the RADs).

The overall goals of the Accelerated Remote Area Development programme include the establishment of self-reliance among remote area dwellers, the improvement of the political and administrative capacity of remote area communities, the overcoming of development constraints (such as lack of access to markets, capital and tools), and enhancement of planning, coordination and project implementation capacity at central government, district and local levels. Crucial areas for development consideration for the future well-being of remote area population centres are the economic and educational conditions of RADS. The following is focused on the various economic strategies pursued by remote area residents and human resource development strategies, including both formal and non-formal education and training.

Planned economic activities to be undertaken under accelerated Remote Area Development Programme (Ministry of Local Government and Land 1987-1993) are *Agriculture* (cultivation, conservation, grapple plant, wild fruit herbs and worms); *Wildlife* (game ranching, game culling, skin tanning); *Food processing* (Biltong making, bread making, grapple planting), *Horticulture* (vegetables); *Livestock production* (poultry, small stock, cattle, donkeys, mules), and *Marketing* (internal and external of Biltong, handcrafts, melons, brad, eggs, chicken, worms, grapple plant, etc).

Assessment of the four types of economic production for the RADs (agriculture, pastoral, hunting and gathering) shows many constraints as these affect arable agriculture after the prolonged drought of 1981-86 affected production. The little produce obtained is usually for domestic consumption and is rarely marketed. As very few RADs own livestock, insights into new livestock schemes are still sketchy since the plan is still at an introductory level. Government laws enforce conservation for wildlife, maintaining a level population for sustainability. Few special hunting licences are made available to the RADs communities and this low number results in under-utilization of the game resources.

Drought has adversely affected "gathering", which is done during the rainy season, as an economic activity. Normally the most important reason for gathering is consumption. Despite all such constraints there exists potential for improvement and employment creation. For example, the introduction of solar desalination plants in the Kgalagadi desert (R11C—1977) has proved successful in producing fresh water—a crucial concern in the desert, and commercial salt for both human and livestock consumption. This economic activity is done by the RIIC staff in collaboration with RADs village development committees. The villagers are trained in all the elements of personnel and financial management for a successful, self-sufficient salt production facility. R11C (NGO) extension has a long history of training village dwellers in skill and management techniques through the village artisans' training programme.

In summary, employment and income generating activities in Remote Areas include hunting, collection of wild resources, arable agriculture, pastoralism, fishing, tourism, handcrafts, bee-keeping, poultry and salt production using solar desalination technology. Such production-oriented activities require educational knowledge and skills training strategies.

Human Resources Development Strategies in RADs
Formal and Non-Formal Education and Training

One objective of Botswana rural development policy as outlined in NDP VI is to provide an environment conducive to all Botswana to have a productive life by creating new employment opportunities where feasible, to improve social services leading to healthier and better educated families and to increase and sustain production from the land and other natural resources. So far about 80% of the villages now have access to potable water. The primary health care strategy has covered 85% of the rural population that is within 15 km of a health facility, and 85% of school age children are in primary schools. Impressive as these figures are, RADs are still disadvantaged. A shortage of skilled human resources following on the colonial neglect has constrained the implementation of these development plans. However, the government has been aware that the prerequisite of sustained economic growth is the availability of skilled and productive human resources (Ministry of Finance and Economic Planning, 1985).

This also has direct implications on the significance of rural and remote area development in Botswana through the expansion of both formal and non-formal education training. Educational opportunities for RADs have expanded in post-independence. The goals of human resource development

are, among others, to expand the capacity of RADs and RAD institutions to plan, direct, and assess development activities, and to encourage and increase the level of participation of RADs in a variety of development activities. Thus enchancement of leadership and organisational skills is crucial to accelerated socio-economic development in RADs. The government is also aware that to improve further the public service performance, there is a need to change the attitudes of staff towards work. Thus the government has increased the Central Training Vote to enable training of more officers than hitherto. The Natural Industrial Training and Technical Education Council (NITTEC) will seek to identify critical areas for training so that the country's resources are put to the best use (President Masire, November 1990). Special RADOs (Remote Area Development Officers) have been appointed to administer and promote RADs socio-economic and political development. Social services are of significant concern in RADs development strategies. Table II shows data on social services in RADs settlements in Botswana.

Table II: Social Services in RADs Settlements in Botswana

District	*Schools*	*Hostels*	*Health Posts*
1. Central	13	0	6
2. Ghantsi	9	3	8
3. Kgalagadi	0	5	0
4. Kgatleng	4	1	5
5. Kweneng	0	3	1
6. North West	6	1	4
7. Southern	1	0	0
Total	33	12	24

Source: Data adapted from Robert K. Hitchcock—Monitoring Research and Development in RADs of Botswana Report I, 1989 page 76.

Data in Table II illustrate humble attempts to provide mainly primary schools, hostels and health posts. Some districts have fared better than others. However, problems of remoteness, migration, lack of roads and small size of settlements (5-100 persons), continue to hamper government efforts to provide public social services. For example using the government criteria of providing a primary school to every settlement of 500 people and above leaves many RADs settlements unattended. The solution is to combine several settlements and to provide a school with hostels for boarding for children from greater distances. As well, the government is trying hard to re-settle some RADs in selected settlements, promoting the goals of security, changes in land use, and tenure in RADs is another development strategy. In brief, considering the total population in RADs and the small number of schools so far provided there is greater need for more action in the area of human resource development. Non-formal education also must be instituted, as must training programmes in vocational areas.

Research evidence (Mutanyatta, Mutava, 1988) shows that the presence or absence of formal and non-formal education affects literacy in RADs. Tables III and IV illustrate this point.

Table III: Literate Population by Gender and Category of Acquisition of Literacy—Motokwe (Remote Area Dwellers) Village

Category	*Males*	*Females*	*Total*
1. Youths in primary schools	175	192	367
2. Youths finished Standard VI	—	—	133
3. Youths in secondary school outside the settlement	—	—	41
4. Adults above 15 years who are in the National Literacy Programme Non-formal Education (NLP)	64	129	193
5. Youths below 15 years in NLP	25	26	51
6. Adults finished NLP—new literates	11	32	43
Total	275	379	828

Source: Mutanyatta J, Mutava P. (1988): *Literacy Flourishes in the Heart of Kgalagadi (Kalahari) Desert: The Motokwe Village Case Study*, IAE, Mimeo.

Table IV: Literacy Levels in Four Remote Area Dwellers Settlements (RADs)

Variable	*Kedia*	*Khwee*	*Mmakgama*	*Mmiya*
No. of respondents who have ever been to primary school	8 (18.6)	0 (0)	0 (0)	0 (0)
No. respondents who have been to secondary school	2 (7.4)	0 (0)	0 (0)	0 (0)
No. of respondents with other type of education	5 (11.6)	1 (6.0)	0 (0)	2 (10.5)
No. of respondents who are illiterate	28 (65.1)	17 (94.0)	14 (100)	17 (89.5)
Total number of respondents	43 (100)	18 (100)	14 (100)	19 (100)

Source: Data adapted from: Christopher Ndozi and Elisha Nielson Toteng (1989): A socio-economic survey of selected Central District Remote Area. Settlements applied research until Ministry of Local Government and Lands.

A close analysis of data in Tables III and IV clearly shows the effectiveness of the presence or absence of formal and nonformal education in RADs. The researchers carried a house to house survey of Motokwe village (300 km or so from Gaborone to the extreme Kalahari desert westward) to establish baseline data for long-term eradication of illiteracy in the village (Table III). At the time (1988), the village contained 168 families with a total population of 1,254 people (490 or 39.1% males and 764 or 60.9% females). Data show the distribution of literacy levels and form of acquisition. The village contains one primary school and adult literacy programming by the Department of Non-formal Education is carried on. The illiteracy rate by age and gender revealed that persons between 6-15 years, 49 were males and 45 females (N = 94); those above 15 years, 65 were males and 93 females (N = 158). This resulted in a total of 252 illiterates in the village. The remoteness of the village hindered any individual in her effort to achieve above standard seven

via continuing education. This demonstrates a need for further secondary education by correspondence education at a distance for RADs. Secondary education by correspondence or other distance teaching methods is a suitable modality for RADs, since secondary schools are not available in these remote settlements and will not be available in the near future. Equally revealing is the variation in literacy levels in four remote areas (Table IV). These data show in no uncertain terms that the population in these RADs is characterized by high levels of illiteracy (from a total of 94 respondents 81 or 86% had never been to school and do not have an exposure to non-formal or adult literacy programming that started in 1981 targeted to 250,000 illiterates in Botswana). In a nutshell, the government must provide more formal primary and secondary school education, and adult literacy classes in remote areas. The question is how. This leads us to a debate on modalities of education provision in RADs and, especially, distance education.

Application of Distance Education to Non-Formal Education in Botswana

Let it be clear from the onset that there is no specific distance education for RADs but for the general public as a whole. The assumption is that the RADs are also the target group in the Botswana society. Therefore in this section, data is provided to show the manner and extent to which distance education is practiced to enhance formal and non-formal education for human resource development in Botswana. Application of distance education has been developed in Botswana to serve a variety of target groups in a variety of ways. (Mutanyatta, 1989, 1990; Mutava, 1990 and Dube, 1988.

Table V: Distance Education Programmes in Botswana: Types and Modalities of Offering

	Type of Programme	*By Who Institution*	*Target Group*	*Methodology*
1.	Farmer's Broadcasts	Information unit Ministry of Agriculture	Farmers	Radio Botswana
2.	Health Education	Ministry of Health	To all Botswana	Radio Botswana
3.	Correspondence Education at J.C. and GCE	Ministry of Education Dept. Non-formal Edu.	Continuing education for J.C. and GCE examinations	Radio, Print and face to face tutoring
4.	Adult Literacy: National Literacy Programme	DNFE Literacy Unit	All illiterate and semi-literate and new literates	Radio Botswana Print
5.	Women in Development	Ministry of Home Affairs, Women Affairs unit	All women	Radio Botswana Print
6.	School Broadcasting	Departments Primary and Secondary Education	Students in formal Educ.	Radio Botswana
7.	Conservation of Nation Resources	Agriculture Wildlife Dept. and Tourism	Botswana especially in game reserves	Radio Botswana and Print
8.	Mass Campaign	Agriculture Education Health, Politics etc.	Botswana general and specific groups	Radio Botswana
9.	Higher Education	University of Botswana Certificate in Adult Education and Theology	grassroot adult educ. and church personnel	Mainly Print, tutoring and Radio Botswana in some cases
10.	General Coverage e.g. Employment Creation, Youth and Social Welfare	Several relevant Ministries and NGOs	General and public and specific groups	Radio Botswana

Table V reveals that there is evidence of a change in attitude towards the use of educational methodologies developed for distance education. The role of Radio Botswana in educating and mobilizing people for extension related programmes, public information, as well as political issues, cannot be overemphasized.

Programmes include agricultural extension, correspondence education, health education, and adult literacy. *Agricultural extension*, provided by farmer broadcasts, constitutes about 40% of the educational programmes over Radio Botswana, signifying the importance of agriculture in the country. The general aim is to encourage farmers to adopt new scientific and technological practices in both arable and livestock farming. Agrinews leaflets are also printed for use by farmers and other leaders in rural reading rooms, libraries (Mchombu, and Mutanyatta, 1987). Contacts are made by extension agricultural demonstrators, though extension services are still low in this country. Also, for the RADs, Remote Area Development Officers have been appointed. In all, no concrete data exist on assessed agriculture performances in RADs. The only evaluation known is that of the mass-campaign of the Tribal Grazing Land Policy (Etherington, 1977). However, the campaign tended to attract the schooled at the expense of nonschooled. The audience reached amounted to 52,100 people. Less than 4 in 10 of the audience claimed not to have attended school, while 60% of the audience claimed to be literate. Considering that most RADs are illiterate and that they do not possess cattle, such a radio campaign may be of little effectiveness to them. But findings that show far less uneducated people listen to the radio than the educated ones are probably generalizable to all educational radio programmes, and must be accepted as an inevitable disadvantage of using radio as a medium of adult education.

Correspondence education, administered by the Department of Non-formal Education (DNFE), focuses mainly on school leavers after standard seven, drop-outs in secondary schools and failures at junior secondary school level and General Certificate of Education (J.C. and GCE, respectively). Subjects offered are Biology, Geography, English, History, Mathematics, Setswana and bookkeeping at JC level. The programme uses print, tutoring and radio. It started in 1973 and a total 14,052 enrolled by 1989, of which, 1 451 have attempted JC examinations (1979-1988); out of which 433 passed the JC exams and 1,021 failed—revealing the impact of the programme (Mutanyatta, 1990). The DNFE also offers distance education by radio on knowledge and skills in various income generating activities, e.g., home economics, and study skills.

Health education topics are aired on radio Botswana. These include immunization, breast-feeding, family planning, etc. A feasibility study (Mutava, 1989) and a pilot project evaluation (Mutava, 1990) of human resource development was conducted in Botswana on various aspects of the training of health managers for the Ministry of Health through distance education (print, and individual tutoring). Eventually, distance education as a technology for training health personnel in management will reach RADs.

Adult literacy by the radio mainly concentrates on motivation awareness and general basic education. Through print, worksheets are sent by post to adult literacy learners for feedback on numeracy, literacy, and functional skills related to income generating projects. Post-literacy primers and leaflets have been produced by the DNFE for new literates to continue reading on their own. A consultancy is being carried on to establish the magnitude and extend of the needs of post-literacy in Botswana (Mutanyatta, et al, 1990). Apart from these distance education programmes, nonformal education is also provided to rural regular village development committees, and farmers committee. No attempt has been made to establish a rural radio programme format in Botswana but the need is there. There of course exist constraints in radio listenership in Botswana. These include poor reception especially in RADs, lack of radio, illiteracy, and convenience of air-time.

Summary and Conclusion

The paper has attempted to show the characteristics of Remote Area Dwellers and their socioeconomic development strategies. The government's positive attitudes to develop RADs is also discussed. Bottlenecks and constraints to bring about RADs development are pointed out. Attempts to provide reliable public social services are debated and data provided.

Noted is that although some efforts have been made to provide RADS with some social services like water, schools, health posts and communication infrastructures much is still to be done in the area of land allocation, creation of big settlements, introduction of new technology in arable and livestock activities, and provision of formal and non-formal education. The use of distance education strategies is urgently needed especially to cater for primary school leavers and possibly for school age children who have no formal schooling in small RADs. A programme could be developed to teach the 3Rs for such children and upgrade their 3Rs to levels of primary school and then to junior secondary school levels. Language differences between RADs has led to the suggestion that formal and nonformal education and training be instituted to train RAD indigenous people to enhance their own local development.

Remote Area Dweller Settlements pose serious development bottlenecks and constraints but we cannot give up on helping them as Botswana continues to believe in the prosperity of mankind and of its citizens in RADs. Canadian Remote Area Dwellers may be facing similar environmental, ecological and communication problems as those in Botswana that inhibit socioeconomic and political development.

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Successfully Implementing a Native Teacher Education Program through Distance Education in Labrador

Dennis B. Sharpe
Memorial University of Newfoundland

Introduction

Labrador, a relatively small, but significant part of Canada's north with an area of about 295,000 square kilometres is home for two distinct (based on culture and language) Native groups: the Innu of Sheshatshit and Davis Inlet; and the Inuit and Native-Settlers of the north-eastern coastal communities of Rigolet, Postville, Makkovik, Hopedale and Nain. With the exception of Sheshatshit, all of these communities are geographically isolated, separated by virtually impassable terrain and accessible only by air year round and by coastal boat for a few weeks in the summer and early fall. The winter climate is harsh and the summers short. Population varies from a high of about 950 in Nain to 220 in Postville. Language spoken differs within each community, with the use of English being most widespread. However, the use of one or the other of the Native languages is dominant in some areas, with some of the population being practically unilingual. The primary livelihood of the people is one based on the fishery supplemented by some hunting and trapping, with more recently in Nain, the development of a commercial caribou hunt.

Each community has an all-grade school organized by school boards under the Newfoundland and Labrador Department of Education. The curriculum is basically similar to that found elsewhere in the province, but with some distinct cultural, and particularly language differences. There are courses in Innutut in Inuit community schools, and in Naskapi-Montagnais (Innu-ai-mun as it is called in Sheshatshit) in the Innu schools. The development and use of Native languages in schools has grown in recent years, particularly with the introduction of immersion type programs in the lower grades in Nain and Sheshatshit. There are a mix of Native and non-native teachers in the schools, as well as a number of Native student teachers, or teacher aides as they are sometimes called.

Within each community there is at least one audio tele-conference site which is linked through a dedicated fully interactive provincial network to the centre in St. John's. Some sites also have more sophisticated equipment such as electronic blackboards as part of the tele-conference system. There is also an accessible facsimile machine located somewhere in each community. Almost all students can also be contacted by telephone. These resources have greatly facilitated distance education efforts, since mail service has proven to be unreliable in the past, especially in the winter months, as a means of communicating with students and other people involved with the programs.

Teacher Education

The need for well qualified Native teachers for Labrador schools has long been recognised, not only to provide the necessary cultural elements as part of the Native childrens' education, but to also provide a stable teaching population in schools where 50 - 90% annual teacher turnover among non-native teachers was (and still is) all too common. Also, Federal/Provincial funding had made provision for Native people to be hired as classroom teacher aides. Such people were an ideal target population for a teacher preparation program.

In 1977-78 Memorial University of Newfoundland developed the field based 20 course (2 year) Teacher Education Program in Labrador (TEPL). This was done through an advisory committee comprised of representatives from the Federation of Newfoundland Indians, the Naskapi-Montagnais Innu Association, the Labrador Inuit Association, the provincial Department of Education, and Memorial University. The program received University Senate approval in 1978, and courses have been offered, in Labrador, since that time. The courses have been specifically developed to meet the needs of Native teachers, and include 14 courses in Education and six in other

academic areas such as Linguistics and English. All courses carry regular Memorial University credit, and most are transferable to other programs. Graduation from the program with a Diploma in Native and Northern Education has enabled a number of students to obtain provincial certification and become qualified classroom teachers.

Approximately 10 years later the need for a degree program that would enable this group to further upgrade their professional qualifications was established. Considerable input was obtained from the students, the schools and school boards in Labrador, Native organisations, and the various departments at the University. A five year Baccalaureate degree (B.Ed.in Native and Northern Education) was approved in 1987, and although it contains unique provisions that further address the needs of Native people, it is considered equivalent to the other under graduate degrees in education offered by Memorial University. Many courses on this program have also been offered to date through distance education techniques.

Student entrance into TEPL and the B.Ed. (N&N) program is through a regular application to the University and a specific application to either program. Students must have either completed high school matriculation requirements, or be eligible to enter University through the mature student clause.

Program Organization

The programs are administered from the main university campus in St. John's through a Coordinator of Native Education within the Faculty of Education. Both are field based programs with the intent that most of the courses be offered off campus in Labrador and in, as far as is feasible, the communities where the students reside. Also, for the most part, courses are offered separately to the Innu and Inuit/Native-Settler groups due to linguistic and cultural differences.

The Native and Northern Coordinator makes periodic visits to the students in the communities involved with the program, and also maintains contact by telephone at other times. Within Labrador, use is also made of field coordinators (one representing the Innu group, and one the Inuit/Native-Settler group), and of a contact person in each community. The field coordinators assist, among other things, with the details of setting-up and scheduling of courses in Labrador. Both levels of coordinator use the community contact person to keep in touch with the students and relay

messages back and forth. Such a communication system has worked extremely well over the last few years.

Outside input into the program is obtained through two different committees: one an Academic Committee comprised of representatives from each of the academic departments across the University that offers courses on the programs; the other, an Advisory Committee on Native and Northern Education, which is comprised of members representing the students in the program, the school boards in Labrador, the Native organisations, the Department of Education, as well as Memorial University Faculty of Education. The latter committee is chaired by the Coordinator of Native and Northern Education and typically meets four or five times a year in Labrador. All aspects of the programs,including the effectiveness of course delivery methods are often discussed at such meetings.

To maintain the academic integrity of the programs, all course offerings including instructors hired to do the teaching, need the approval of the respective University departments. For example, if a Native language course is to be offered, then approval is required from the Linguistics Department. Also, if the instructor was not a regular faculty member at Memorial, then the department concerned would assign one of its members to liase with the instructor with respect to such things as course content and evaluation.

Student Characteristics

Most of the students in the programs are female, 25-35 years of age, married and have children. All are residents of one of the seven communities listed earlier. Most did not go beyond grade 10 in high school, and so entered their university program as "mature students". Approximately 80% of them work full-time in the school system either as teachers (these would be mostly TEPL graduates), or as teacher aides, or, in two instances as school administrators. Most will have had a number of years experience as teacher aides working with regular classroom teachers prior to starting their first university course. At any point in the program over the past several years, each student would have accumulated a varying number of course credits since they started the program at different times, and did not always take advantage of courses offered in their particular community. The students have varying degrees of English language proficiency, however, for almost all of the Inuit/Native-Settlers, English is their declared first language. For the Innu, the first language is more typically Montagnais and English Language proficiency varies widely.

Program Delivery

Delivery of these field based programs has been a constant challenge over the past 12 years. When planning the individual courses many variables obviously have to be taken into account including courses needed, availability of instructors, scheduling, student work (teaching) and home commitments, resources needed, mode of delivery, curriculum content, accommodation if instructor or students relocate temporarily for a course, as well as all of the student, cultural and geographic considerations previously discussed. On top of this, University regulations have to be considered and taken into account, a fact that students living far from a campus they typically have never visited or attended have a problem comprehending. Also from an administrative perspective, the numbers of students in each community were small, making it more feasible and economical to offer a course to a group of students from many of the communities at one time. Also, during some course delivery schemes, it was, and continues to be more beneficial and productive, to offer more than one course at a time.

There is no panacea as far as program or course delivery is concerned. However, many approaches have been tried, and some have worked better than others. In the first years of the program, instructors were flown into a selected community for a period of six weeks to deliver a course directly to the students. This, in a more common use of the term, is probably not considered distance education by many, but rather education at distance. However, it had many advantages, not the least of which was to allow direct student - teacher interaction as well as after class tutorial work. This approach was also facilitated by freeing the students from their teacher aide duties for an hour or two each afternoon at the end of the school day to take the courses. The school board and school administration were often very cooperative in this regard. However, as a way of delivering courses, it did have disadvantages. It often entailed students from other communities travelling and boarding in the selected community, thus having to leave their families for several weeks. Attracting suitably qualified instructors was also a problem with this approach, since it would mean them staying in the community for the duration of the course. Few professors from the University were available to do this due to on-campus commitments.

One variation of this approach was to break the course into two three week sessions with a break in between that allowed both students who had travelled to the course and the instructor to return home. The break also allowed time for reading and work on other assignments. Contact could be maintained by phone, and,or the occasional tele-conference session.

Another variation was to offer courses a four week, rather than six week block of time in a more centralised location such as Goose Bay, Labrador, during the first few weeks after school finished. Accommodation had to be arranged for the students (and their families who chose to accompany them) as well as day care facilities for the children.

Correspondence was tried as another way to offer courses. This well recognized distance education technique has been employed at Memorial to deliver credit courses on other programs for many years. Considerable lead time is required to prepare and, or adapt course material for this approach. Unfortunately, correspondence course delivery to students on the Native Teacher program did not work out well, and in fact was a dismal failure. Although some students were successful, most were not able to muster the self discipline required to keep up with their individual study and assignments, and they were often distracted from working on the course by the many other events in their lives as mature married people with family responsibilities. Even the availability of locally employed tutors was not an inducement. In particular, it seemed that if the informal leader within a student group in a community decided to quit a particular course, then it was not long before the rest of the group also dropped the course.

Tele-conference has been used a number of times, particularly with the students working on their degree program. Such students, graduates of the TEPL program, have more experience with university course work, and are more easily able to adapt to the system. Also, it should perhaps be mentioned that most of the graduates, being qualified teachers with their own classrooms, are not easily freed up from their school commitments and therefore have to take courses after school hours. This is not always convenient for them, but few alternatives are available. Tele-conference has worked most successfully when the instructors concerned are known to the students through teaching other courses, on site, in the community. Success is further enhanced by having the courses specifically designed for the program and for delivery by distance education. This incurs additional preparation costs that need to be considered when planning program delivery.

Combinations of the previous delivery methods can, at times be the best approach to take. Partial on-site instruction can be supplemented, for example, by tele-conference sessions if the instructor is not able to stay in the community for the whole duration of a course. The system can also be used to "bring in" guest speakers, as well as be used for group tutorial work. There are many possibilities.

Difficulties (Challenges)

One of the most common problems confronting program delivery, regardless of the technique used was, and continues to be, the lack of resources in each community to support courses from an academic perspective. All reference material often needs to be supplied, and ideally in place prior to the course starting, together with basic texts and supplies. Reality though, often meant that mail service and, or adverse weather prevented this. If an instructor, or one of the Coordinators happened to be visiting the community around course start-up time, then they would be able to take material with them (if the plane wasn't already over loaded). Occasionally, a student or instructor would call the main campus with a request to send up packets of paper for duplicating since the school had simply run out of this basic commodity. It is difficult to anticipate all eventualities.

Another real challenge concerns the hiring of suitable course instructors. The people hired need to be both acceptable to the academic department concerned as well as have the ability to relate to the Native people and do a good job of teaching. Good instructors have been difficult to find. Occasionally, a local teacher meets the necessary requirements and is able to teach a course in the community, and some have done an excellent job. However, their role as classroom teachers and professional staff room colleagues of the Native students during the day conflicts with their temporary evening role as an instructor, exacerbated by the small community environment in which they all reside.

Another facet of instructor hiring, whether they be regular on- campus faculty or from outside the University community is that of familiarity with distance education delivery. Not all instructors are able to adapt to this and change their preferred style of teaching. For example, a person who employs a lecturing technique on the tele-conference system, and who found it difficult to adapt to a discussion approach, would find it difficult to maintain student attention for very long. Also, tele-conference delivery is considerably enhanced by the use of graphics, good support material, and applications which involve technology such as the electronic chalkboard.

When to offer courses has also been a constant issue. Scheduling is necessary that anticipates most of the school, church based and other events in the communities. Certain times of the year are also better than others. For example, the Innu group have recently told us that they would prefer not to have courses during the summer. Use of appropriate time slots during evening tele- conference sessions is important. The best times were found to be those later in the evening, after supper when family responsibilities have been taken

care of. A seemingly small issue, but one that could change course outcomes for the better.

Winter travel has often impeded course offerings and coordinator travel. On one memorable occasion, an instructor left St. John's to travel to one of the communities to teach a course. The next day a phone call was received from the instructor giving the message that she was stranded in a nearby community and the plane had returned to Goose Bay due to heavy snowfall further up the coast. Two weeks later she was still in the same community waiting for the snow to stop and the plane return. Weather hold-ups are all too common during certain times of the year on the Labrador coast and can play havoc with the best of plans.

One final challenge of a different kind should perhaps be mentioned. Courses are delivered in English, and for a number of Innu students in particular, this has presented some difficulties which have been solved on some occasions by having a translator present. On others, the more fluent students have taken on this role and assisted with translation. Given this situation, almost no use has been made of true distance techniques, and courses have been delivered through on-site instruction to the Innu group.

Techniques for Increasing Success

Some of these have already been alluded to above, for example, appropriate scheduling for tele-conference courses, providing a break during courses offered in the community, and having all support material on hand. However, there are many other things that can help increase the chances of success of a particular course as well as the program as a whole.

Tele-conference has been considerably enhanced as a delivery method by doing a number of things in addition to hiring instructors who can use a variety of techniques on the system. One has been to double the amount of time typically made available on the tele- conference system for teaching a course. This provides the chance for much more discussion and time for some tutorial work. The other has been to encourage the instructor to visit the students in the different communities prior to course start up to: (a) meet and talk with the students and, most importantly, allow them to get to know the instructor; and (b) deliver course material and resources and start the course off. This obviously adds to the cost of course delivery, but without that initial first personal contact, most students would be reluctant to interact on the tele-conference system. The meeting is also beneficial to the instructor, especially if its their first time teaching a course on the program. Even for

busy university professors, there is often time before semesters start to do this kind of thing without disrupting their on-campus teaching. Finally, a third and seemingly very obvious thing to do, is make sure that the tele-conference site in each community is properly set-up and ready for the sessions ahead of class time. A person can be hired to do this, or it can be accomplished by one of the students, but it is important. During one winter course it was realised that students were not attending at one of the centres. Upon investigation, it was found that no one was turning the heat on in the building ahead of time and it was simply too cold for students to sit and take the sessions.

All modes of delivery have been improved by the use of the facsimile machine. As a means of communicating, it has helped considerably with everything from straightening out application procedures and documentation to providing course sites, regardless of distance education methodology, with resources, getting assignments to and from students with considerable expediency, and providing on-site community contacts with course organisation details. However, on a note of caution, the faxing of examination for administration in a community has to be handled carefully and the location of the facsimile machine within the community taken into account.

The use of collect phone calls to the main campus has been encouraged, especially from students and field coordinators. This results in more frequent communication, and can be used to quickly clear up questions about courses and course planning. Over the years, we have found that students have not abused this privilege.

As mentioned earlier, there are identified contact people in each community. These are people who can easily talk to the students and arrange on-site course details. They are given a small stipend each year for their services, although indications are, that most would willingly help for nothing. Shortly after community contacts were first put in place, we wondered why it had not been done years before since it considerably enhanced the communication process.

The use of on-site tutors for any of the course delivery methods has met with varying degrees of success. Hired to assist the Native students, such people, even though well qualified, have not always been accepted by the students. Reasons for this have been difficult to ascertain, but primarily, it might have something to do with the fact that the only people typically available have been the non-Native school teachers in the community. The hiring of people as tutors has to be done with much prudence.

By contrast, the use of Native people as resource people for the courses (in addition to the regular instructor) has worked out extremely well with both Native groups. Such people have been particularly beneficial in the offering of Native language courses, and courses that particularly involve Native culture. Also, in addition to enhancing the success of the course, it has been a boost to the self-esteem of the assistantsed who themselves are often students on the degree program.

One last technique should perhaps be mentioned that has helped to boost the success of the courses. It has involved hiring substitute teachers to replace the students, freeing them up from their regular classroom duties during the day and enabling them to work on University courses. Such an option can be used for part of, or the whole duration, of a course. It is not a cheap option, and it is sometimes difficult for the school to find suitably qualified substitutes, however, it does enable the student to focus their attention more fully on the course material. Also, it can help facilitate the offering of more than one course at a time.

Comments by Students

A recent evaluation of the use of the tele-conference system to deliver courses on the Native teacher education programs in Labrador revealed that student reaction to the system was mixed. Some liked it because it did not interrupt their teaching schedule in school and because they did not have to leave home (the community) to take the courses. Some simply enjoyed using the system and the freedom it provided to take part in class discussions. Others found it difficult to interact with the instructor without the face-to-face contact. Such variation probably isn't unique to this group of students, but typical of any class of mature adult students with varied preferred learning styles.

Summary

Delivering field based programs will always be a challenge, and the Native teacher education ones in Labrador are no exception to this. The need to be cognizant of the unique nature of the program, the student characteristics, the languages and culture, and the constraints imposed by the geography and climate will always be present.

Having instructors teach the various courses in the community is a good way to offer the programs and is preferred by most students. However this method is not always viable, and the alternative of various distance education methods

then becomes attractive. Some of these methods have been more successful than others, and most can be enhanced by attention to detail and the use of supplementary resources. This may result, at times, in a more eclectic approach to distance education to produce the desired outcomes, but it is well justified. Future advances in distance education technology and their application in the field is likely to have the potential to further increase the success of programs such as these.

On a final note, it should perhaps be mentioned that many of the elements of program delivery discussed here are perhaps generic to a wide range of education, training and other developmental activities in remote regions.

Distance Education Delivery Networks—Role in Community and Institutional Development

Terry Anderson
Director, Northwestern Region
Contact North/Contact Nord

Introduction

This case study examines the role of a distance education delivery network in both community and institutional development. The paper looks at processes and practices of a distance education delivery network—Contact North/Contact Nord. A successful distance education initiative must address the development needs of both the communities and institutions. Within the educational institutions there is a need to develop faculty and administrative commitment and support and effective systems that provide support for long term distance education delivery and development. Equally important is the development of a supportive climate within the communities. This support must extend from the local government, community organizations and local school establishments through to the individual learners who enrol in distance education programs.

Distance education challenges both institutions and communities to adapt to change in the philosophy, technology and practices of both learners and teachers. The paper discusses the role of a distance educational network in supporting and animating this change process.

Distance Education and Development

The concept of development is often ambiguous and described by such terms as "growth, social change, advancement, progress and modernization which are heavily value-laden" (Daniel, 1990). Maslow (1954) has attempted to differentiate the various stages of need. For the purposes of this paper I will assume that development is sequential and is concerned with strategies for meeting human needs, beginning with the most basic needs for food and shelter and progressing to human needs associated with personal and community actualization.

Furtado (1977) describes three components of development which have particular relevance for the role of education in general and distance education in particular. First is the economic dimension which requires that development enhance the productive capacity of the society. Second is the ideological component which calls for distribution of the benefits of development to accrue to the population as a whole. Finally there is the political dimension which requires that various affected groups have an opportunity to participate in the decision making related to the decisions and thus "influence the use and distribution of scarce resources" (Daniel, 1990)

There seems little doubt that distance education has the potential to meet these three criteria for successful development. It is fairly easy for educational institutions to develop programming which meets the economic criteria. Developing programming that fulfils the political and ideological component of development is often very difficult. In order to even understand, much less be able to affect these political and ideological components requires a depth of understanding and familiarization with target populations which is usually lacking within the institutional structure. Thus the linkage between target populations in the communities and educational institutions is crucially important if distance education is going to contribute to community development.

The Nature of Distance Education

Distance educators have a propensity for arguing about the fundamental nature of distance education. Journals are full of learned discussions pertaining to the definition of distance education, classification schemes, models, systems and topologies, delivery medias and generations of development of distance education. This voluminous discourse is a consequence of the newness of this form of education, the tremendous growth

and adaption of distance education theory and practice in different cultures and geographies and of the impact of modern communications technologies.

It is beyond the scope of this paper to enter this fray (Garrison, 1989; Keegan, 1980) however it is important to understand the general model of education that underlies the perspective of the professional educators who currently develop and deliver distance education programming in order to appreciate the institutional perspective that guides distance educational development.

Rumble (1986) has expanded into the realm of distance education the work of Bertrand (1979) on general education models. Bertrand developed a framework which divides education models into three broad categories—institutional-centered models, society-centred models and person-centered models.

Institutional-centered models focus on increasing the effectiveness and penetration of formal education content and process by delivering education in a distance format. These models are concerned with credentialing, equivalency of academic standards between distance education and on campus programs, integration of faculty and administrative systems into a distance format and increasing access to formal educational opportunities. The delivery model employed by institution-centered models is usually based on information processing and transmission of knowledge from instructor to students. This model drives the vast majority of distance education programming currently available in Canada.

Society-centered models develop from a community base and generally adhere to a social-action or community development perspective. In Rumble's (1988) words the "purpose of the educator is to help the whole community to identify what is to be learnt, to find the resources for learning, and to evaluate what has been learnt". The society-centred model is dependant on groups of learners sharing their knowledge, perspectives and problems and then using all available resources (including formal educational institutions) to solve these problems. Thus the delivery model is predicated on the use of face to face community gatherings or more recently the use of 2 way telecommunications technologies that support group process and problem solving. Society-based models reflect the learning needs and pre-dispositions to learning that have been identified within the literature on adult education. Pioneering work in this type of education model was undertaken in Canada in the 1920's and 1930's by the Canadian Antigonish Movement and in the 1940's by the radio based Canadian Farm Forums. More recent examples of this model of distance education are found in many developing countries especially in Latin America.

Person-centered models of distance education focus on individual students undertaking a formal course of study. These are differentiated from independent research or study in that a formal education institution is involved and learning is usually negotiated under a contract between a faculty member and an individual student. This model is derived from the European model of higher education and is dependent on individual students having clear conceptions of their educational goals and objectives and having the skills and aptitudes to define and persist within their learning agenda. In addition the model depends on educational institutions that are prepared to provide this type of individualized delivery. There are very few examples of this type of person-centered distance education in Canada today.

The use of distance education as a development tool within the Canadian environment is dependent upon transcending the gap between the formal educational institutions which, with very few exceptions follow an institution-centered education model and community leaders and groups that generally subscribe to a community-centered model. To accomplish this goal considerable change must take place both within institutions and within local communities.

Distance Educational Delivery Networks

From an institutional perspective, the human, capital and operational resources required to provide quality, distance education delivery and support services in many communities spread over large distance is often beyond the capacity of any single education deliverer. As a response to these high costs, a number of multi purpose delivery networks have been established in Canada (Alberta Teleconferencing Network, Contact North—Ontario, Open Learning Agency—British Columbia, Saskatchewan Communications and Access Network)

The functions and services of these delivery networks vary in scope, mandate and capacity. Some have mandates that include the development of course material and granting of degrees on their behalf others are limited to the delivery and distribution of courseware from other accredited educational institutions. Generally, these delivery networks provide information services to enroled and prospective learners, learning centres for interactive distance delivery of courses, technical troubleshooting and instruction in use of delivery technologies and informal, first line student support and referral services.

Contact North/Contact Nord Case Study

Contact North is a provincially funded distance education initiative that is designed to increase access to educational opportunities for residents of Northern Ontario. The project works as a change agent at both the community and institutional level as well as a direct service provider to learners and institutions.

Environment

The demographics of Northern Ontario are similar to those found in many rural regions in Northern Canada and throughout the Northern hemisphere. The region is economically very dependent on resource extraction industries—notably forestry and mining. Population density is very low, (approximately 800,000 people are spread over an area of 780,000 sq. kms) with many small towns separated by large tracks of bush.

The region suffers from high unemployment rates while automation and demand for technological skills creates shortages of skilled workers in the major resource based industries. Education levels are generally lower then the national averages (Nelson and Minore 1988). Thus there is a demand for basic education and skills training. Native communities are assuming responsibilities for self government and are seeking access to educational programming that will provide locally the skilled employees to manage this development. Finally there is a growing need for development of the necessary skills and access to communication and information tools which empower a community to assert its own development perspective in the technologically oriented Canadian economy.

Contact North as Delivery Vehicle

At one level Contact North operates as an electronically based delivery system for both credit and non credit programming originating from Northern Universities, Colleges and secondary schools. To accommodate the widest variety of delivery modes currently in use by distance education delivery institutions in Ontario, Contact North has configured its network with a heterogeneous collection of educational delivery technologies. A 60 port digital teleconferencing bridge as well as the CoSy computer conferencing system was purchased for each of the two regional coordinating centres (one in Sudbury and the other in Thunder Bay). Each of the 34 community access sites is equipped with a teleconferencing convener, a facsimile machine, a

video tape playback system and television, an IBM AT and a Unisys ICON microcomputer as well as an audio cassette recorder and telephone answering system. Telewriter II audiographic devices are also used at each site to enhance the teleconferencing capacity on the network.

The most common mode of delivery currently being used on the Contact North network is print and audio or video tape packages supplemented by audio teleconferencing. The facsimile machines are being used for rapid turn around of student assignments and tests.

To date the major users of the Contact North network have been northern colleges, universities and secondary schools delivering credit programming. During the 1989-90 academic year 375 teleconference supported courses were delivered to 4693 registered students. The network is also used by non- profit community organizations (Boy Scouts, Literacy Groups, Day Care Advocacy Groups etc.) and professional groups (Law Society of Upper Canada, Canadian Association for Distance Education) for meetings and training activities.

Contact North as an Agent of Institutional Change

The development of distance education development and delivery capacity within a formal education institution is not an easy task. Distance education challenges the role of teachers, physical facilities (notably libraries, bookstores), admission policies and practices, examination and assessment practices, and student services.

The Contact North program has developed a number of initiatives designed to stimulate and assist educational institutions in adding distance education delivery capacity to their traditional on campus and continuing education delivery models. The major focus of these initiatives are:

Northern Distance Eduction Fund

A key ingredient insuring post secondary participation in the project was the allocation of over $8 million of Contact North project funds to a Northern Distance Education Fund (NDEF). The fund is used to develop or purchase distance education programming. The conditions of application to the fund include the following:

1. priority given to projects undertaken in a collaborative manner

2. full programs, not courses to be developed

3. content and delivery methodology to clearly meet northern needs

4. development of new programs not currently available in Ontario

5. encourage quality development by the use of course team approach

The "forced marriages" dictated by the first condition of the NDEF resulted in the first collaborative course development teaching programs ever attempted by many of the institutions. The development process, like most marriages had their share of problems, but to date—no divorces!

The Employment of Professional Distance Education Consultants

A total of 7 full time positions have been created to assist institutions in effectively developing and delivering distance education programming. Four secondary school liaison officers are responsible for developing a major distance education initiative within the approximentaly 100 secondary schools in Northern Ontario. These liaison officers work with teachers, principals and Ministry of Education personnel and are engaged in training activities, consultation with course development teams, and administrative support for "cooperatives" of small school boards who are sharing distance education development and delivery resources.

A Training and Instructional Design Officer works with a variety of post secondary institutions offering training programs (both face to face and at a distance) and individual consultations with faculty members new to distance education and with established curriculum development teams.

Finally Contact North employ a Community and Native Liaison and a French Language programming Officer. These individuals work with these two special target populations and assist both community groups and delivery institutions in the development and delivery of programming aimed at these target populations. (Roberts, Burge and White, 1990)

These professional staff offer a unique perspective to staff and faculty of the educational institutions. They are able to offer advise and assistance, without becoming involved in the political and bureaucratic intrigues that flourish in many complex educational institutions. In the communities these workers are

viewed as proponents of educational change and increased access to educational opportunities, without being identified with any vested interests from a particular educational institution.

Role in Developing Feedback Loops

Contact North staff working within the local communities as well as those with regional job responsibilities are constantly meeting with individuals and organizations with diverse educational needs. Many of these needs could be met through distance education. Contact North interactions with course developers and delivers at all levels of formal education allow these needs and requests to be focused on the institution most likely to have or be capable of producing the necessary programming. The fact that Contact North does not develop or deliver programming on its own behalf, but serves as a delivery vehicle for other institutions, puts the organization in a unique non competitive relationship with the individual institutions.

Support for Research and Information Dissemination

Recognizing the need for formal research in the evolving field of distance education, Contact North has sponsored a number of research papers and conferences. These studies were designed to address formative evaluation of Contact North itself as well as more general questions relating to community and institutional access to distance education services. One example of these research projects is the funding of a multi year study by Drs. Nelson and Minore to assess the project's impact on the communities. (Nelson and Minore, 1989)

Despite these studies, there is a great deal of activity within the project that is not being systematically evaluated and thus its impact and effectiveness is reduced. In particular it has proven difficult to inspire educational researchers within the northern universities to participate actively in the thriving educational laboratory that Contact North has created.

Contact North/Contact Nord as Change Agent in the Communities

Contact North works at the community level both to facilitate actual course delivery and to develop and nurture the growth of a learning culture. The major activities of the program in local communities are summarized below:

Establishment and Support of Community Access Sites

The Contact North access sites in small northern communities serve as study and learning centres for distance education learners. Tomlinson (1984) describes the necessity of establishing physical facilities to support distance learners. According to Tomlinson the functions of these study centres are threefold.

1. a meeting place for students and tutors

2. a place to share the use of equipment

3. a place to access library materials

The Contact North sites do provide meeting facilities and the "warm coffeepot" for students, however due to the very large distances involved, most of the interactions between students and tutors take place via audioteleconference. Equipment such as the micro computers and the video machines are used extensively by students. Some institutions provide study centres kits with reference books, tapes, etc., that act as specialized learning libraries.

A major issue facing Contact North is the availability of suitable space as programming and student numbers increase. The policy that rent free accommodations be provided as a community contribution to the project has strained the capacity of some communities where adequate and secure facilities are in very short supply.

Contact North operates full access sites in 34 communities spread across Northern Ontario. An unplanned consequence of the animation roles of professional staff working in the Native and Francophone communities, was the demand for delivery services in over 70 additional small communities that were not targeted nor funded for development as "access sites".

Although the first objective of the Contact North program is to provide access to educational opportunities to residents in remote communities, the number of potential students in any single community is related to the size of that community. The Contact North model is currently based upon extensive use of a local learning centre, access to audioconferencing equipment and the active presence of trained distance education learning facilitators (site coordinators). Thus the development of additional full access sites is dependent on availability of both capital and operational funds. The demand for additional access led to innovations in equipment procurement (purchases

by community organizations, schools and other government agencies besides Contact North) and in student support (use of volunteers, schools and community workers as well as short term funding for part time staff by Contact North).

One example of this type of innovation was a one year pilot project in six remote communities. These six communities were provided with a facsimile machine and an audio teleconferencing convener. A community contact was identified in each community and a two-day inservice and training session as well as a series of audio teleconferences were held with these community contacts. A system of remuneration for the community contacts based on amount of teleconference supported delivery was developed. Finally a staff member from Contact North was assigned to provide support and information services to these communities.

The results of this experiment were extremely variable. This variation was related to:

- Quantity and quality of the programming from delivery institutions targeted at the communities (Institutional commitment), and
- Degree of local support and awareness of the opportunities provided by distance education. (Community commitment).

When comparing these "collaborative sites" to fully equipped and staffed access site communities it was apparent that successful implementation was highly dependent on support (both financial and moral) from Contact North as well as from local community organizations, regular information flow between and amongst communities, Contact North and the delivery institutions and a commitment on behalf of at least one major educational deliverer to offer relevant programming within the community.

Finally Contact North has continued to support delivery of students in very small communities spread across Ontario who wish to participate in distance education programming but who do not have access to a learning centre. Generally these students dial into teleconference courses from their homes.

Support and Training of Local Site Coordinators

Experience within the Contact North project has shown the critical role of community based distance education facilitators referred to as "site coordinators". Hickling (1989) concluded that "the site coordinators are an

innovative and important element of the application of technology to improve the accessibility of Northerners to educational opportunities." Student surveys by Hickling (1989) determined that over 89% of students using the Contact North program obtained assistance from the site coordinators. This assistance included help with technologies (60%), motivational support (40%) and help with course work (34%).

The role, training and support of these community based support workers is multi facetted (see Anderson (1989) for a more in depth discussion). In brief, front line educational workers such as the site coordinators are confronted with a variety of student issues and problems ranging from lost text books to deep personal and community problems. The site coordinators are trained to be good listeners and to know the resources of their local communities and educational institutions that can be focused on these problems. Obviously they do not provide in depth student counselling nor can they speak for the institutions that use the delivery network, yet they can, and do provide the necessary encouragement and support to help students to help themselves.

The degree to which part time Contact North site coordinators should become involved in vocational, academic or personal counselling has been an issue during the project. In particular academic counselling is a very sensitive issue since only the registrar of a particular institution can speak with authority for that institution. However that registrar is often a thousand kilometres or more away from the distance education student in the community. Site Coordinators have also been tempted to become over involved with the wealth of educational, economic and community development problems that exist in Northern Canada. Contact North has not been given the mandate nor funding to use distance education as a direct vehicle for community change and empowerment, yet it is difficult if not impossible to separate educational from political and economic aspirations and expectations.

Computer conferencing is used as the primary communication vehicle between Contact North staff both in the communities and at the Regional Coordinating Centres. The unique capac ty of this communication media to provide administrative and collaborative support to team workers separated by large distance has proved invaluable within the project. (Anderson and Sweet, 1990)

Provision of Information Services

Calendars and promotional materials from over 60 educational institutions from across Canada are displayed in the small reference libraries maintained at the access sites. The number of educational institutions delivering distance education programming in Canada is large and increasing each year.

Delivery institutions are encouraged to provide sample packages of study materials for student perusal. The CoSy computer conferencing system is used as a data base and query service by which part time staff and students can make inquires of other staff and institutional employees relating to available programming.

Access to libraries by distance education students in Northern Ontario is problematic (Burge et al., 1988). Access to online catalogues as well as recent implementation of 24 hour toll free telephone inquiry services at a number of institutions is assisting Northern learners to access library services.

Profession of Interactive Technologies

Boyd (1989) has noted that "cost effective distance education minimizes the use of administratively expensive local study centres and personal tutor telecommunications, in order to save money even at the expense of effectiveness." By providing study centres and audioteleconferencing services to delivery institutions at no cost Contact North supports the development of more personalized programming and increases the quantity and quality of the "dialogue" component of a course. Kaufman (1989) reviews the literature documenting the importance of dialogue as an essential enhancement to distance education based on course packages and concludes that "an extremely flexible communication system must be provided to permit dialogue among learners and teachers." Besides the audiographic enhanced teleconferencing, Contact North provides computer conferencing and facsimile services to learners and delivery institutions.

The costs of these interactive technologies are however becoming a major concern within the project. Generally all forms of interactive distance education are more expensive then non interactive medias such as print based courses. The challenge for distance delivery networks like Contact North is to insure that the technologies are employed as cost effectively as possible and to exploit opportunities as delivery medias and channels develop and evolve.

Support of Distance Learning Culture

Hughes (1989) has documented the importance of a "student learning culture" and contends that "value systems, behavioral norms and customs cannot be effectively conveyed merely through course materials." She goes on to argue that:

> "off-campus students need to establish an identity within a university culture which they can in part achieve through group interaction. In the process . . . they create their own version of the university culture which may or may not approximate either the academic culture or the on-campus undergraduate culture. Central to this process is the role of the intermediary, a leader who acts as a broker between the university and the students and controls the version of received reality".

While the degree to which Contact North staff "control" the received reality of learners is questionable, Contact North staff, in the local communities, assist learners in maximizing their interest and input into their educational experiences. Examples of this type of "student animation" would include initial support for the chartering of the Distance Education Students of Canada (DESC) as well as support for an electronic student's newspaper focusing on issues relevant to distance learners.

Promotion of Distance Education Programming

Despite the availability of thousands of distance education programs, it has been our experience that local community residents are generally not familiar with the opportunities which distance education makes available. Contact North has attempted to promote distance education learning through a variety of promotion strategies including posters, selling of sweatshirts, distribution of promotional placemats in local restaurants, local newspaper and radio ads, publishing of a free promotional "fax directory", regular distribution of nearly 2000 copies of our newsletter, publishing of an annual report and regular listings of programming delivered via our audio teleconferencing network. In addition Contact North staff make many presentations to community groups, educators and professional and industry associations.

Conclusions

This paper has attempted to outline the function and service of a particular distance education delivery network—Contact North. Contact North is a catalyst that works to integrate and optimise the potential of distance education as a development vehicle and strategy. In order to optimize the effectiveness of its development potential, especially the political and ideological components of development, increased communication, collaboration and understanding between institutions and communities is essential. By providing human and material resources to support this integration Contact North serves to enhance the utility of distance education as a development tool.

Distance education is in many ways a subversive activity—it subverts the monopoly of regional institutional mandates, centralized decision making and planning and exclusive institutional control of learning. At the same time it subverts the traditional excuse of learners in small communities that they do not have opportunity to pursue or influence educational programming.

The development of delivery networks such as Contact North, with a mandate to both support and challenge institutions and communities as well as to offer a broad range of support and delivery services is an important tool in the struggle to enhance development opportunities in Canada's northern communities. Effective life long learning opportunities, accessible to learners without constraints of time and distance is a prerequisite to active participation in post industrial society. Distance education is the only mechanism available to achieve this goal in the north. Distance Education delivery networks such as Contact North not only provide the physical carrier to deliver programming, but also facilitate the changes in both institutions and communities that are necessary to ensure the realisation of distance education's development potential.

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Developing and Implementing A Distance Education Secondary School Program for Isolated First Nation Communities in Northwestern Ontario

Margaret Fiddler
Principal
Wahsa Distance Education Centre
Sioux Lookout, Ontario

Introduction

9:10 AM. Snowmobiles roar towards the Adult Learning Centres in 15 communities in Sioux Lookout District, Northwestern Ontario. The Distance Education Co-ordinator is arriving for the day.

9:15 AM. Radio dials are turned to 90.1 FM. A soft upbeat croon swells to an enticing chorus:

> And we're waiting for the right time;
> Won't you call us right now.
> Yes we're waiting for the right time;
> Wahsa's your dreams come true. -------

An elder from a different community each morning offers thanks for this new opportunity at learning, and asks a blessing for Wahsa students and staff. The announcer explains that Wahsa Distance Education Centre is a program of Northern Nishnawbe Education Council (NNEC), offered over FM radio through Wawatay Native Communications Society, which broadcasts to 43 isolated native communities in northern and Northwestern Ontario.

> "Good morning. Here are the Wahsa announcements for Monday, December 10. It is Week 14 on the school calendar".

Another day of radio classes for Wahsa Distance Education students has begun.

Background

Wahsa is an Oji-Cree word meaning "far away". Or, as one adamant believer has translated—"far out." The program is well named!

The classroom for 1990-91, our initial year of operation, is 200,000 square km. of bush and semi tundra where 15,000 Cree and Oji-Cree live in 23 isolated communities ranging in population from 38 to 1500 people. While nearly all of the communities have federally funded locally controlled schools from Kindergarten to Grade 8, only three offer programs at the grade 9 and 10 level.

In the majority of the Sioux Lookout District communities, teenagers must leave home at the age of 14, travel south by plane to live with strangers in a home where their language is not spoken, and attend a school which invariably has more students than the entire community from which these adolescents have emerged.

For some, this system has worked. For most, it has been a dismal failure. The Northern Nishnawbe Education Council (NNEC), a native run organization, has the mandate from the 23 area Chiefs to serve the needs of all secondary and post-secondary students in the communities in Sioux Lookout District. NNEC places approximately 400 secondary students in southern homes each year. Half of the grade 9 students do not complete their year. Half of those returning the following year drop out during grade 10. The pattern is repeated until by the end of Grade 12. Only 10% of the students graduate. In June, 1990, statistics showed that in the 23 communities that NNEC serves, 900 adolescents between the ages of 14-19 remained in their home communities.

unschooled. For the generations of adults who have preceded them, the schooling statistics are even worse.

Related Area Distance Education Area Initiatives

By the autumn of 1989, a variety of distance education programs had established themselves in Northwestern Ontario. These became models on which Wahsa could build a system to meet the needs of the students in Sioux Lookout District. They included the following:

1. Contact North had developed a distance education network throughout Northwestern Ontario using convenors, telewriters, computer conferencing and fax machines to facilitate communication. They had supplied expertise, some technical equipment, and bridge facilities, along with a Native Liaison Officer to introduce the concept to northern First Nations.

2. Windigo Education, a department of Windigo Tribal Council, serving several area First Nations had used the Contact North system to offer an extensive program of professional development through teleconferencing for teachers and support staff of Windigo Affiliated locally controlled schools. Some sessions had been combined with other area First Nations schools. Networking had proven especially beneficial for education counsellors, classroom assistants, and language instructors who work in isolation from their counterparts in other communities.

3. Independent Learning Centre (ILC) Access Site. ILC, the Correspondence Program of the Ontario Ministry of Education, had agreed to an Access Site in Sioux Lookout. This meant that rather than having students send their correspondence lessons to Toronto for marking, students could fax their applications to a Centre in Sioux Lookout, send their lessons to Sioux Lookout area teachers for marking, and in the process reduce the "turn-around" time from nearly a month to two weeks.

4. Dryden District School Board, the provincial school board serving students in Sioux Lookout, had offered a co-operative program between small high schools in adjacent towns with each school offering one course through teleconferencing to both locations.

5. Wawatay Native Communications Society, the well established, native run Communications Network, offered 4 hours of live radio programming daily in the native language, weekly television broadcasts in the native language, and a biweekly bilingual newspaper. With its mandate of retaining the native language and culture, it was interested in expanding its services, especially in the native language.

6. Lakehead School Board in Thunder Bay was supplying secondary school credit courses through a joint project with Indian and Northern Affairs Canada (INAC) and Thunder Bay area First Nations. They were using Contact North Distance Education equipment to deliver programs.

7. Northern Lights School Board in Moosonee, Ontario was offering a parallel program to First Nations communities in the James Bay area.

8. The Seine River Adult Learning Centre near Atikokan, Northwestern Ontario, featured a Contact North site with teleconferencing for Distance Education courses, a library, ILC access site, and on-site instruction. It provided a suitable model for northern First Nations to create a suitable Learning Centre for receiving Wahsa programming.

9. Lakehead University and Confederation College in Thunder Bay were two of many post-secondary institutions across the country offering courses through Distance Education. Confederation College offered a General Vocational Program (GVP) through teleconferencing for adult students requiring upgrading in order to enter college courses.

The Process of Wahsa Programming Development

In November of 1989, representatives from pertinent organizations met to share ideas and discuss possibilities for a Distance Education alternative for the remote northern students. People gathered from Northern Nishnawbe Education Council, Windigo Tribal Council, Shibogama Tribal Council, Independent First Nations Alliance, Wawatay Native Communications Society, Contact North (Provincial Distance Education), Ministry of Education (ILC Correspondence Courses), Indian and Northern Affairs Canada, District and Region, Dryden Board of Education (serving Sioux Lookout residents), and interested First Nations. It was agreed to have the native organizations draft a proposal. After further meetings and approval from the group the proposal was submitted to Indian and Northern Affairs Canada for pre-implementation funding.

In March, 1990, INAC accepted the proposal and quickly provided initial funding, making feasible a target operational date of September, 1990. An Advisory Board composed of representatives from Northern Nishnawbe Education Council, Wawatay Native Communications Society, the Tribal Councils, and four First Nations met regularly to advise on and approve the plans as they proceeded. The project would repeatedly shift and shunt with the prevailing political winds, and then would move forward again.

Contact North had been the distance education system promoted as an equalizer of opportunity for native people in the province. Contact North had initially supported the pre-implementation phase of the Wahsa program with advice, basic distance education equipment to participating communities, and use of networking facilities. However, it became clear that the governing structure of Contact North would not support equal access to the Contact North Delivery System for Wahsa programming unless Wahsa was affiliated with a Provincial School Board. There was no indication from the native organizations involved that this step would meet their needs. NNEC agreed to accept Wahsa as one of its programs. INAC agreed to provide funding for the program.

Wawatay Native Communications Society agreed to deliver Wahsa programs over its radio network. The decision to use Wawatay Native Communications Radio link as a delivery system was made for political, logistical and financial reasons. Wahsa would not be allowed to use Contact North system on a first-come, first-serve basis. Moreover, the Contact North system is undependable in the North as it depends on telephone lines that are inadequate, unreliable, and cost-ineffective. By July of 1990, the plan for using Wawatay Radio Network had solidified. The decision was made to proceed with this untried delivery system.

NNEC applied for Private School Status for Wahsa with the province of Ontario. At that point, the program was on its way.

The Outcome

Wahsa maintains its accountability to the communities it serves in a variety of ways:

Local Feedback. There is constant feedback from students, distance education Co-ordinators, Local Education Authorities (who are most often responsible for the program at the community level), and Chiefs and Councils. Open

communication is considered paramount to molding the program to meet the needs of the participants.

NNEC Working Group. Wahsa reports regularly to the Director of Education at NNEC, and to the NNEC Board of Directors (presently known as the working group) who are supportive in constructive suggestions on improvement for the program.

Wahsa Advisory Committee. Because of the overload of responsibilities placed on the NNEC Working Group, an additional Advisory Committee is in the developmental stages. It will consist of educators from the NNEC Working Group, NNEC Senior Management Staff, Wawatay, and four communities who utilize Wahsa most heavily. It will make recommendations on course selection and content, textbook selection, delivery methodologies, and will be a constant source of feedback on the progress of the program.

There is a shortage of adequate buildings of all types in Sioux Lookout District First Nation communities. Houses are traditionally in short supply, of inferior quality, with no running water, and sometimes with no hydro. Federal school construction is at least 10 years behind requirements. In 15 of the 23 communities, there are no school gymnasiums, libraries, shops, science labs, or computer rooms. In five communities, there is no school at all. There is certainly no room for adult students who want to start or resume a high school education.

Wahsa is a community-based program. The acquisition, furnishing, and maintenance of the local Learning Centre has became a community initiative. Provincial ministries were approached to support the establishment of Learning Centres in participating Wahsa communities. To date (1990) they have not responded.

First Nations interested in the Wahsa program designated a building for the Adult Learning Centre. The easiest building to obtain and renovate is an old house. The living room becomes the radio/convenor room; bedrooms become small group session areas and individual study carrels. The support and desire for Wahsa programming has become most evident through the community efforts in creating an Adult Learning Centre that is warm, attractive, and inviting. Education is beginning to be recognized as a priority. The Learning Centre has become a focal point for the new thrust on life long learning.

In addition to a building, the community provides a distance education co-ordinator, a person who organizes the logistics of the operation, as well as tutors and students, or helps the students in obtaining the help needed. These

people are the eyes of the teachers, and are crucial to the success of the program.

Wawatay Native Communications Society is a well-established, native-run communications organization, serving the entire Nishnawbe-Aski (Treaty #9) area covering 200,000 square miles, including 44 communities from Timmins, Ontario on the East and James Bay coast on the north to the Ontario-Manitoba Border on the west and Thunder Bay area on the south. Its FM signal is broadcast via a TV Ontario Audio Subcarrier on Anik C, and can be received from Kentucky to Newfoundland.

Wawatay's mandate is to increase communication links across this vast district, and to assist in maintaining and propagating the use of native language and culture in the area. From its main broadcast studios in Sioux Lookout, and its secondary studio in Moose Factory, it provides the following:

1. FM native language radio programming daily: 4 hours;
2. television programming weekly:
   - 1 hour of news, tradition, and general interest;
   - 1 hour of youth programming;
   - 1/2 hour of children's programming;
3. newspaper; bimonthly in English and Oji-Cree syllabics;
4. HF trail radios for trappers: as required;
5. language services including translation and adaption of English to Indian;
6. desktop publishing; and
7. market research.

The Wawatay Radio system has proven to be far superior to other alternatives in meeting Wahsa needs. What was initially perceived to be a risk has turned into a substantial asset.

Independent Learning Centre (ILC) is the Ontario Ministry of Education's link to distance education through correspondence. The recent trend has been to decentralize distribution of materials and teacher markers in local store-front or access centres. Wahsa had been designated as an access site

both for all residents of Sioux Lookout, and for surrounding communities, including all the area First Nations early in the implementation process. This step has given credibility to NNEC as a deliverer of programs to non-native residents. In addition, it has meant close liaison with the Independent Learning Centre in creating programs that are more meaningful for northern students.

The Program

Wahsa offers two kinds of courses: a) Radio courses and b) Wahsa IL (Independent Learning) correspondence courses.

Each has advantages; each supplies different options for the students. Radio courses are considered to be preferable to IL courses because they provide more structure for the students; there is direct (radio or telephone) contact with the students; and the materials are created for native learners and presented, where possible, reflecting native learning styles. For some students, Wahsa IL courses are more suitable because they do not require attendance at specific time sessions; they are continuous entry courses; and students work at their own pace.

Courses offered that are "compulsory" in the Ontario Ministry guidelines are broadcast day and evening. Smaller demand courses are offered either day or evening.

Courses offered

1. Radio.

   a. Regular radio courses. This past semester, Wahsa has offered 8 courses over radio at the general level. They include:

Oji-Cree	Grade 10	Mathematics	Grades 9, 10, 11
Ojibway	Grade 10	English	Grades 9, 10, 11

In the second semester of the 1990-91 school year, Wahsa will offer over radio:

Oji-Cree	Grade 11	Geography	Grade 9
Native Studies	Grade 10	Science	Grade 9, 10
Mathematics	Grade 10	Computer	Grade 10
Bookkeeping	Grade 10	Consumer Studies	Grade 10
Art	Grade 9	Chemistry	Grade 11
Accounting	Grade 11	Guidance	Grade 11
English	Grade 12		
People of Native Ancestry	Grade 11		
English (Writer's Craft)	Grade 10-11		

b. Adapted correspondence courses. The latter group of courses introduce a new variable, as they use packaged lesson materials from the Ontario Ministry of Education Correspondence Branch (Independent Learning Centre). These materials will be adapted to meet the needs of the native learners.

2. Wahsa IL Courses.

These use Ontario Ministry of Education Correspondence courses. Wahsa offers an enhanced correspondence featuring:

a. immediate delivery of course materials;

b. area teacher markers;

c. extensive phone tutoring services;

d. fast turn-around time for marked papers.

The Wahsa Delivery System

Most teachers broadcast from the local Wawatay studio. However three teachers are presently residing in the northern communities. They telephone into Wawatay, and do their classes live in a similar manner to those presenting in town.

There are 4 in-watts lines to the radio studio. Students can phone in questions. Teachers can request specific students or communities to phone in at specific times.

Students are requested to attend their classes at the Learning Centre; however, that is not a hard and fast rule, and some students listen in from home for a variety of reasons.

Once a week, materials are transported via local airlines to the students. In return, lessons for marking are sent by air to the Wahsa centre in Sioux Lookout.

Variables Utilized at Present

In order to discover effective methods of program delivery, a number of variables have been employed. They include the following:

1. Full-time and part-time staff have been used because some subject areas (Oji-Cree, Ojibway) could not support a full-time person. For certain staff members who had home or other responsibilities this suited them; it suited the program well too.

2. Staff at a distance were utilized because

   a. two staff members are permanent residents of the north and would not consider a position unless they could remain in their home community;

   b. one staff member was hired as the part-time Distance Education Co-ordinator. Having him on Wahsa teaching staff complemented all that was being developed in that community's distance education program.

   This has been one of the most difficult variables with which to deal, as it has hampered communication among staff members severely. In theory, it should be possible to have teachers located in any area of the country. In reality, at least for the first year of operation, it is desirable to have them centrally located so that intensive collaboration can occur. However, this has to be weighed beside the desirability of having native teachers on staff.

3. Back-up markers: Due to late registrations, and difficulty in the initial year of operation of forecasting accurate student numbers, one teacher ended up with a total of 160 students in two courses. Wahsa hired a teacher-marker to facilitate the marking. Although the people involved collaborated well, it was not as effective a system as having the on-air teacher mark his/her own students' assignments.

4. Trained teacher as Distance Education Co-ordinator: One community chose to hire a non-native teacher to assume the role of Distance Education Co-ordinator, feeling that a trained tutor would be beneficial to the success of the program. While statistical analysis has not been completed, there is no indication that this has been a strong asset or liability to the program.

Student/Teacher Interaction

Student support is achieved through on-air discussion and questioning; teacher follow-up to specific Learning Centres, and specific students; weekly forms completed by students indicating what materials they have included for marking, and any areas where they require assistance; regularly scheduled times where the teacher is available for telephone tutoring; some community visits by teachers.

Challenges

As the introductory flaws get removed from the program, additional areas requiring improvement become apparent.

Increase in on-air student/teacher contact: Initially, students were not reticent in speaking on air with their teachers. Recently, it has become more challenging to get on air student participation. Wahsa staff members are constantly searching for methods of attaining this contact, or alternative methods of achieving a similar effect.

Support from Provincial Ministries: Although Wahsa is not a Provincial Board of Education, Wahsa students will eventually enrol in provincial programs. It behooves the province to facilitate the students and staff in

1. creating academically acceptable programming;

2. providing access to distance education equipment, facilities, and expertise similar to those provided to provincial school boards offering parallel programs to First Nation communities; networking and sharing distance education initiatives.

3. Wahsa has much to offer in determining meaningful programming for First Nation students. Wahsa provides a suitable forum for pilot projects. It is prepared to share its expertise and knowledge with secondary or

post-secondary institutions who also desire creative programs meeting the needs of isolate students.

Plans for the Future

Distance Education Co-ordinator Training

It is becoming increasingly evident that the Local Distance Education Co-ordinators play a pivotal role in the success of the Wahsa program. In January, 1991, Wahsa hosted a training workshop for the Co-ordinators. The information shared enhanced the weekly staff meetings that are held on air as a support to these very special people.

Uplink Television

In September of 1990, Wawatay received the first up-link television in northwestern Ontario. Live television broadcast to the Wahsa communities began in September, 1991. Wahsa will take advantage of this opportunity to enrich its audio programming with periodic televised classes.

Increased Radio Programming

By September, 1990, Wahsa expanded its radio course offerings to include grade 12. There is also a need for courses at an academically advanced level for those who wish to pursue a university education.

Visions for the Future

Learning Centre Development

There is a need for Learning Centres to be more than the renovated past; they are the essence of the future. Those who believe in innovation and sustainable community development will quickly recognize the potential of this system. It will be a sound investment to support First Nations in developing fully equipped Learning Centres that magnify the goal of education as life long learning.

Potential Expansion of Programs

There is a need for effective programming for the north in the following areas:

1. Upgrading for adults not academically ready for secondary school courses;

2. Certificate courses for teachers, classroom assistants, and education counsellors; and

3. On the job training for First Nation personnel such as Band Administrators, Economic Development officers, Outreach workers, Child and Family Workers, Drug and Alcohol Workers.

4. Professional Development for teachers, nurses, etc.

5. Networking and sharing for those working in isolation such as community health workers, social assistance administrators, native language instructors, Airport Maintenance workers etc.

Wahsa will be approaching the First Nations to have them identify their priorities in expanding the current programming areas.

Conclusion

A recent phone call reflects the intensity of the desire and the difficulty of the task. A student shared the following with her teacher:

> "I'm way behind on my assignments, but please please don't drop me from the course. I went to the Band Office today and said I was quitting my job so that I could get caught up, and they said, 'you can't, we need you'. It is even harder here than in the other Wahsa communities. We have only one phone, and it is connected directly to the wall, so that we can not have a convenor to speak with you over the air. We have no airstrip, and freeze-up is coming, and we will not be able to get materials in and out to you for a month. I am the only one taking this course, and my friend who supports me flew out yesterday with her sick baby. We have no hydro, and so we are using kerosene lamps; this makes reading difficult. And the calculators that you sent us are solar operated, and I am standing here with a flashlight over it to make it work."

We sent another calculator! And she is still enroled in the course!

Wahsa is symbolic of its students. Wahsa has encountered a harsh environment, and has learned to manoeuvre within it. Wahsa has taken the technology and course content of southern programs and molded and shaped it to fit northern students' needs. With a little time, Wahsa will emerge as a strong alternative for students who choose to make the north their home.

Literacy Proposal for the Community of Nose Creek, Alberta

Pat Larsen
Alberta Vocational College
Slave Lake

Introduction

This paper, based on a proposal developed in May 1989, shows the unconventional concepts that may be required to link a distance education program closely to the community. It is intended to help create sustainable and relevant programs.

Literacy Perspectus

Recently, both national and provincial attention have focused on issues relating to lack of literacy in adults. The Southam Study (1987), for instance, reports that based on performance, 20% of all Canadians do not possess adequate literacy skills to engage in life tasks common to most Canadians. In their statement on literacy (1988:1), Canadian Ministers of Education concluded that "approximately one-quarter of Canadians over the age of eighteen are inadequately educated in terms of the requirements of an industrialized, high-technology society".

Adult literacy is of particular concern in many areas of northern Alberta, especially with indigenous residents. Indeed, the Southam Study reports that the incidence of poor literacy among native populations is 24%. Further, the Early School Leavers in Northern Alberta Study (1983) reports that 31% of students leaving school do so before completing Grade 9 (an education level generally accepted in Canada as a minimum for functioning in a technological society). This Study reports that of students in remote northern communities (most of whom are indigenous residents) 85-97% starting Grade 1 do not complete their schooling. If, as some research indicates, schooling is a primary indicator of literacy, it may be assumed that the incidence of illiteracy among remote northern Alberta native persons is considerable.

Historical factors lending to the lack of education (and, by inference, literacy) in northern indigenous adults are numerous: limited or no access to schooling, cultural/religious/economic traditions which do not depend on written communication, and families with histories of little literacy who tend not to encourage literacy development in their members.

Illiteracy in itself, however, does not become a problem for adults until they, because of demands made by their changing circumstances, perceive themselves as requiring such skills. For example, adults do not tend to improve literacy skills until there is a purpose for doing so; a purpose which is meaningful to them. The purposes adults have for literacy are derived from the demands placed on them by their roles, their settings and their aspirations. Thus, to be effective and to affect change, literacy development must be directly tied to what the individual perceives as required to serve his/her needs.

Contributing to the need of indigenous northerners for literacy development are increasing demands made by mainstream society and technologies. For instance, traditional native entrepreneurial endeavours such as fishing, trapping and hunting, all of which are historically nonliteracy-based economic activities, are being seriously eroded by economic development such as the oil and forestry industries. These mainstream activities have generated the need for indigenous persons to acquire particular types and levels of literacy skills either to participate in these mainstream economic movements or to initiate other non-traditional economic alternatives. In other northern areas, traditional native entrepreneurial efforts are continuing but with the added dimension that particular levels and types of literacy skills are now required to operate competitively, environmentally and within regulation. In still other areas, indigenous communities who have traditionally used oral procedures to manage their community's development and affairs are now expected by

mainstream society to adopt planning and management practices which require reading and writing skills.

These are but limited examples of the changing circumstances of northern indigenous residents. They demonstrate, however, that each context brings with it specific and practical purposes for literacy. It also becomes evident that a conventional Grade 9 education which, for the most part, is not designed for adults and their purposes, may be inappropriate.

In summary, if adult literacy is to be viewed as a tool for change, there are three guiding premises:

1. literacy must be perceived by the indigenous person as having a purpose;

2. the purpose an indigenous person has for literacy is strongly tied to how that person wishes to use literacy in his/her particular setting; and

3. how the adult wishes to use literacy determines the type and level of literacy development required.

Determining the purposes, uses, and types and levels of literacy needed requires considerable input from those seeking literacy development. As well, the composition and structure of any proposed literacy program must be developed in consort with those most affected—the potential adult learner.

It is from this perspective that Grande Prairie Regional College, Northland School Division and Alberta Vocational Centre (AVC)-Lesser Slave Lake entered into discussions with the adult residents of the northern indigenous community of Nose Creek, Alberta.

Community Profile, Context and Literacy Needs

Nose Creek, 60 miles south of Grande Prairie, is an unincorporated community of 25-30 residents, half of whom are adult. This picturesque mountain settlement is approximately 24 years old and has a family-defined population with historical links to native persons in the Grande Cache area. The leadership is primarily matriarchal.

The only local services are a two-room portable public school, power (for some), and one mobile phone. Government and retail services are accessed by gravelled oil-industry roads 60 miles to Grande Prairie or 40 miles to the small community of Grovedale. The mobile phone, located in the school, has limited access by the community and limited capabilities.

The primary source of income has shifted from traditional indigenous entrepreneurial activities to social assistance. There is, however, a strong sense of community, and the dignity of the culture and its traditions is much in evidence.

Public schooling up to a grade 9 level is provided in English by one Northland School Division teacher and a local aide. Their instructional activities focus, for the most part, on the elementary levels. The junior high school program is primarily correspondence based. Currently, children must leave the community and their families to pursue a high school education. Needless to say, high school graduates are an exception. The Northland school division is negotiating for data and voice communication lines in order to use distance education modes for high school students. This is a major and expensive undertaking as there are currently no communication lines into the community and the project requires the cooperation of many government departments. The majority of adults in the community range in age from 30-50, and have a history of no schooling. In addition, they have not been provided with adult education programs either formal or informal. Their first language is Cree and they speak little English. The children, however, appear to be bilingual. An interpreter is needed for dialoguing with most of the adults, in particular the elders.

The community is challenged by the demands of numerous changing circumstances—all of which, in the view of the residents, contribute to the community's need to reassess and rebuild its human resources and economic capabilities. Some of these changing circumstances are:

1. the erosion of a traditional economic base, coupled with considerable growth in industrial activity and government planning for major recreational development in the area immediately surrounding the community;

2. the community's lack of wherewithall and know how to develop economic alternatives which can replace traditional means of support and which are suitable to the particular skills and aspirations of community residents;

3. the community's increasing dependence on government assistance at the expense of community and individual independence and self-sufficiency;

4. the expectations by others for residents to manage their community affairs in ways which are compatible with mainstream society eg. taxes, land management and stewardship, utilities, etc.;

5. the growing awareness by adult residents that they must be able to better express themselves to and become involved with those agencies of mainstream society which have an impact on the destiny and education of their children;

6. the increasing determination of the community to manage the integration of their community with mainstream society without sacrificing the qualities of their culture.

7. The community elder has assessed the demands of the changing circumstances; and in her view and thus the view of her people (for this is a concensus society), approximately 8-10 adults in the community require new skills and knowledge, the core of which is literacy which is "purpose-specific".

Purpose for Literacy

The specific purpose of such literacy development would be to enhance the abilities of the adult residents to affect and manage positive change in their community's economic, social, and educational situation.

Uses for Literacy

Toward this purpose, the Nose Creek adults have three primary uses for literacy. They plan to use literacy for:

1. improving their abilities to communicate effectively in a diversity of ways with those publics of concern to them (i.e. education authorities, government agencies, industry, business, health authorities, etc.);

2. increasing their knowledge and understanding of community management and how their community can more effectively interact with mainstream society; and

3. developing their entrepreneurial and employment skills, and thus their potential for economic independence.

In short, literacy development is not viewed by these adults as an end in itself; nor is it viewed as preparatory for "something down the road". Rather, literacy is seen as a tool for making change in the community's current situation and by implication, there will be change in the future.

Type and Level of Literacy

Nose Creek residents view literacy development as the acquisition of reading, writing, oral and numerary skills in the context of real-life situations. i.e. literacy skills are to be learned by using them to communicate with the community's significant publics, by managing the affairs of the community, and by developing the community's economic independence. It is these uses for literacy which determine the type and level of literacy needed.

The type of literacy needed is best described through example. Listed below are the three primary uses for literacy, each accompanied by examples of real-life experiences which can be used to acquire literacy skills pertinent to Nose Creek adults.

1. In regard to communicating with a significant public (eg. education authority), literacy skills can be learned through analysing supports and barriers to educating community residents; researching and reporting on the community's educational needs, strengths and issues; preparing and sending pertinent reports and correspondence; orally conversing in English (via telephone and in person) with school personnel and adult education institutions; etc.

2. In regard to managing their community, literacy skills can be learned through accessing and analysing information about the community's health, education, recreation, social and economic needs; identifying potential community resources; planning for and calculating costs and profits for community enterprises; adopting long and short-term planning strategies; exploring conflict resolution techniques; implementing workable decision-making procedures; introducing prevention strategies for health and social problems, etc.

3. In regard to economic independence, literacy skills can be learned through planning and conducting a local labour market analysis; preparing and disseminating resumes; adopting financial planning procedures; practising managed consumerism; participating in job interviews; developing an entrepreneurial plan; etc.

The level to which these literacy skills are acquired is determined by the adult learners' satisfaction at having reached a point which they consider adequate for their uses. As it is not the acquisition of the skills themselves that is important, but how well the skills serve the adults in their various situations that is significant, the level of literacy is relative rather than finite. Therefore, the primary determiner of the level of literacy to be acquired is the individual.

It may be said then, that the emphasis in this approach to literacy development is on the functionality of the adults in their particular context.

Proposed Program Model

Although a number of literacy program initiatives have been implemented in northern Alberta through Adult Basic Education (ABE) and tutoring endeavours, their accessibility by native residents is limited. In the Adult Literacy in Northern Alberta Study (1988), northern literacy practitioners and residents report that native adults are one of the most significant groups underserved by current literacy programs. In addition, there is evidence that few of these programs are based on a comprehensive assessment and understanding of the purposes and uses indigenous adults have for literacy in their particular situations. Thus, the types and levels of literacy development offered are, for the most part, inappropriate to the needs of specific native populations.

In a serious attempt to overcome these programming deficiencies and to focus on those literacy skills which, from the perspective of the residents, are most relevant, Northland School Division, AVC-Lesser Slave Lake and Grande Prairie Regional College collaborated with Nose Creek elders in assessing the literacy needs of the community. In the view of the participating parties, these needs can best be met by providing the community with a "purpose-specific" literacy program which develops adult literacy skills using the current, real-life situations and concerns of the community and its residents.

It is anticipated that this "purpose-specific" approach to literacy programming will not only be relevant to Nose Creek adults, but also highly applicable to the needs of other northern Alberta indigenous groups. Thus, in developing the program and its learning resources, serious consideration will be afforded the program's appropriateness to other indigenous populations with similar purposes and uses for literacy.

Program Premises: All programs are anchored in assumptions, some explicit, others implicit. For this proposal, it is important to clarify the foundational premises supporting the provision of a "purpose-specific" literacy program to Nose Creek. It is the belief of the participating parties that:

1. the adults of Nose Creek already possess a diversity of worthwhile skills and breadth of knowledge which contribute to their current functionality as adults. Although, for the most part, these are not literacy skills, they contribute much to what makes literacy usable. Therefore, they are to be respected and applied in the literacy development process;

2. adult literacy development is most relevant and successful when it is evident to the learner that literacy skills can be used to change current circumstances. Thus, literacy can be effectively acquired through the exploration and resolution of actual and meaningful situations of concern to the learner.

3. adult learners are full partners with teaching resources in the literacy development process. Therefore, their participation is essential in all phases of the program's development, implementation and evaluation.

Program Intent: The primary intents of this "purpose-specific" program are:

1. to provide Nose Creek adults with the type and level of literacy skills which, to their satisfaction, are required to communicate with their significant publics, manage their community affairs and move toward economic self-sufficiency;

2. to provide opportunities for Nose Creek adults to develop literacy skills by using the experiences and situations of the residents and community;

3. to develop learning/instructional resources appropriate to the specific uses the residents have for literacy in their locale; and

4. to actively respect the integrity and aspirations of the community and the wisdom, skills and knowledge of its residents.

Program Approach and Practices: Acquiring literacy skills by using actual adult-focused situations is an approach to learning which recognizes that skill and knowledge building are interdependent; and that learning must be meaningful to the learner. This approach is similar to the "whole-language" literacy program used in several elementary schools, the difference being that the situations and learning resources used are relevant to adults, not children.

Curriculum: Uses for literacy give direction, goals, and parameters to the program. The program, however, is not incumbent on a curriculum which is prescribed or pre-determined. Instead, the curriculum is developed in consort with the learners as learning progresses. This approach to curriculum development

1. provides considerable flexibility in attending to the diversity of learning needs typically found in adult groups;

2. gives credence to the belief that adult learners have much to contribute to their own learning; and

3. assures, in an on-going way, that what is learned and how it is learned is meaningful to the learner.

Instructor: Using this approach, the traditional role of the instructor as the primary source of information and controller of the learning experience is inappropriate. Rather, the instructor becomes a learning facilitator whose fundamental task is, as much as possible, to support and guide the learner as opposed to leading and directing the learner. This means that the instructor is, a "significant helper", not a content specialist, and that his/her involvement in the adult's learning decreases as the adult's skills and know-how increase.

Learning Resources: This approach to curriculum also requires a non-traditional view of what constitutes learning materials and resources. Conventional approaches to literacy development tend to use prescribed materials often associated with schooling. In contrast, a situational or context approach to literacy development utilizes information (materials and expertise) from numerous sources which are pertinent to the uses the learners have for literacy. For instance, if the use for literacy is to establish and operate on entrepreneurial enterprise, learning resources are extracted from organizations and agencies concerned with business development, planning, consumerism, accounting, management, etc. These materials are then modified for the use of the learner. At the same time, the learner is assisted in increasing his/her literacy skills to use the information effectively. In instances where no materials are available, new materials may be developed to serve the adult's particular uses for literacy.

Learning Site: As well, this situational approach to literacy development demands a non-traditional view of what constitutes a learning site. Conventional programs tend to use a classroom as the place where most learning and teaching occurs. The proposed program, however, considers all locations pertinent to the learner's uses for literacy as learning sites. Thus, locations where activities such as meeting with school authorities, purchasing goods and services, telephone conversations with business development authorities, etc., occur, are viewed as places of learning; and the use of reading, writing, oral, and numerary skills at these sites becomes the curriculum.

Evaluation: There are two types of evaluation needed to determine the success of any literacy development endeavour: learner evaluation and program evaluation.

First, in traditional endeavours, learners are usually evaluated against absolute goals and/or specific standards. Persons not acquiring these standards or goals are usually referred to as 'incompletes' or 'failures'. In contrast, the success of Nose Creek learners is determined by the degree to which the residents are able to increase their use of literacy skills in the three areas outlined in this proposal. To measure the degree of change in their literacy functionality, it is necessary, at the onset of the program, to take an account of how well and in what ways the adults currently use oral, numerical and written literacy in communicating with significant others, in managing their community and in operating with economic self-sufficiency. As well, it is important to identify their level of satisfaction with their current literacy skills and know-how. This, then becomes the baseline for determining the degree of change in their literacy functionality as their learning progresses. Both research and practice emphasize that the learner's perception of their own literacy abilities is a key factor in determining the success of the learning and the program. The role of the instructor (facilitator) is to provide on-going assistance to the learners in identifying the changes in their functionality because of the acquisition and application of new literacy skills. There are no failures, in the traditional sense. Rather, there are learners who are demonstrating and expressing change in their situation as a result of literacy development.

Second, the proposed program is to be evaluated from two perspectives: those of the community and the participating institutions. From the community's perspective, the focus of the program evaluation is on: the ways in which the program has served the stated uses the community has for literacy; the ways in which the program's structure, practices and operations have affected the lifestyle and traditions of the community; and the ways the program should be modified to serve the interests and integrity of the community.

This program evaluation will be conducted every six months throughout the duration of the program.

From the institutions' perspective, the focus of the program evaluation is on the impact and effectiveness of the program's non-traditional approach to literacy development in terms of the following program components:

i. the facilitators role, training and instructional practices
ii. the learning materials used and developed
iii. the resources and support systems used
iv. the program's structure and operation
v. the modifications required for each program component

For this evaluation, participation by individual learners and the instructor is required. As well, the institutions must determine the effect the program has had on their respective modus operendi. In short, evaluation of this literacy development endeavour is the composite perspectives of the community, the learners and the institutions.

Program Structure and Operations: In order for the program to actively respect the integrity of the community, it must operate in ways which are conducive to the lifestyle, traditions and operations of the residents.

Timeframe: The desire of the community is to have a full-time literacy program. It is proposed that this program operate for two years.

Scheduling: The residents must view the times scheduled for learning as compatible and not competing with the other important functions in their lives. Thus it is proposed that the learner participants determine, within the program year, the times which are most suitable to them. A guide of 25 hours per week, which usually constitutes a conventional full-time program, will be used.

Learner Participation: The program will be made available to all Nose Creek residents who, in the view of the community, are adults. Recruitment and monitoring of learner participation will be conducted by the community.

Program Personnel: The program will have one full-time learning facilitator, with training/experience in purposive literacy development, development of employment and entrepreneurial skills, and community management. Preference will, however, be given to a local Cree-speaking person, who with training and on-going support (if needed) from a program coordinator, demonstrates potential for this role. The function of this staff would be to assess specific learning needs, assist the residents in acquiring reading, writing, oral and numeracy skills necessary for the community's purposes, and provide learners with resources and opportunities for appropriate, meaningful applications of these skills. This person should be prepared to live in the community for two years.

A one-half time professional program coordinator will monitor the program and provide on-going training, advisement, and support to the local facilitator. As well, the coordinator will be responsible for acquiring and developing learning materials for the specific uses Nose Creek adults have for literacy. This person will also be charged with ensuring that appropriate tools and strategies for the skills inventory and the evaluations are designed and implemented.

The coordinator is the community's primary contact with the institutions involved, while the facilitator is the learner's primary contact in the program. If the program is assessed as serving the needs of additional communities, the coordinator's role may expand to full-time. If, by the second year of operation, there are no other communities involved, the coordinator position may be reduced to one-third time.

It is essential that the community elders be full partners with Grande Prairie Regional College in the selection of the local instructor. The selection/appointment of the program coordinator will be the responsibility of the College, with advisement from the community.

Cooperating Institutions: Grande Prairie Regional College will be the primary institution involved with the program. They will ensure the orientation and training of the local facilitator in the areas of purposive literacy, community, economic and adult development. In addition, they will administer and manage program operations, provide consultation and supervision to the program coordinator, supplement learning resources from existing inventories, and participate in the evaluation of the program. AVC-Lesser Slave Lake and Northland School Division will provide similar functions at the request of Grande Prairie Regional College. Existing learner support services, eg. counselling and libraries, in the area will be used when required.

Facilities and Equipment: A room in the local school will be made available by Northland School Division for the program's headquarters. Instructional equipment will be provided by the cooperating institutions.

Financial Support / Conclusion

And finally, in order for this literacy development endeavour to be realized, two types of funding are required: learner financing and program financing.

Learner Support: Some of the potential participants are in need of financial assistance in order to participate in the program. Several who are currently on social assistance have made it known that they prefer to relinquish this source of income in favour of learning allowances, even though they will forfeit particular benefits such as medical coverage. This proposal respects this decision by potential learners.

Program Support: There are several unique factors which must be considered when determining the cost of the proposed program. For instance the historical lack of resources to this community and, as a result, the need for basic literacy as well as "purpose-specific" literacy, necessitates that a program be offered over an extended period, i.e. two years; the geographic and logistical circumstances of the community means that delivery, training and consultation services require considerable time and travel.

The proposed non-traditional approach to knowledge and skill development of learners and to evaluation necessitates ambitious accessing and developing of appropriate resources and expertise. These factors are primary determiners of the financial support needed and, if the program is to be successful, cannot be reduced or ignored.

Distance Education: En Route from Management to Pedagogy

W. Bruce Clark
University of Calgary

Introduction

The term distance education used in a variety of ways the common element of which is usually (though not always) physical distance between teacher and student. It is applied to traditional correspondence schools, to educational television, to audioconferencing, and to video conferencing, and has been extended by some to include associated issues such as open learning. The writer's interest in distance education is largely limited to its implementation as a means of augmenting the curricular offerings of small (and usually rural) secondary schools. The possibility of using distance education to augment offerings to small schools provides a link between distance education and sustainable community development. One desirable element in communities is access to a comprehensive education. Small communities often cannot afford to provide educational services that are comprehensive in nature. However, distance education appears to be a viable means of expanding the offerings of such schools. In Alberta over the past three years two projects were implemented to test various aspects of distance education in the secondary school setting. The writer was involved in the evaluation of both projects.

In this paper I make three arguments: (1) By treating distance education as a "technology" we risk repeating the same cycle of hyperbole, false hopes and dashed expectations which in the past has accompanied the introduction of technology into education. (2) We have evolved a set of management techniques which facilitate the smooth operation of a distance education program within a secondary school, though one must admit that there remain certain tensions between the needs of the distance education program and the needs of the locally based program. (3) We have only scratched the surface of the pedagogical issues which accompany trying to accomplish through distance education curricular goals which assume a conventional school setting.

Beware the Snake Oil Salesmen

The original working title for this paper was Distance Education vs. the Snake Oil Salesmen. It grew from a perception that, in the context of the secondary school at least, there is a dearth of knowledge about distance education pedagogy that will comfortably match many of the goals contained in the curriculum. Instead of confronting this problem there is a tendency to believe that the media employed (usually referred to as the technology) in and of themselves will facilitate learning. One popular definition of distance education, for example, is that it is the use of technology to eliminate distance as a factor between instructor and students. A corollary to this definition sometimes posited is the more powerful the technology employed, the better will be the learning. This is an assumption, the acceptance of which flies in the face of history.

It is fascinating to study the history of educational media and find the recurring cycle of invention, evolution of educational applications, hyperbole, and disillusion which seems to have occurred with each new medium. Most of us are conscious of this cycle as it applies to educational computing, but fail to realize that it has accompanied the introduction of virtually every medium in the past century. Consider a couple of less familiar examples. In *The Optical Magic Lantern Journal and Photographic Enlarger*, T. Perkins (1893) writes

> No more important auxiliary to education has been introduced of late years than the optical lantern, which, by a process of evolution, has been developed from the magic lantern, which half a century ago was used almost solely to amuse children at Christmas and other parties.

Taunt (1894) in a letter to the editor, however, shows the other side of the coin.

> There are, no doubt, more exhibitions of lantern slides than in days gone past, but owing to several causes they are not looked up to as they used to be and it is natural that this should be so, when the rubbish in the form of slides is taken into consideration. Since the advent of dry plates everything in connection with photography has grown cheaper, slides included; and the vary facilities which these plates allow, has brought a lot of cheap (and nasty) productions in this way into the market.

Obviously we did not have to wait for the advent of the computer to get cruddy software. By 1913, the medium of interest had shifted from slides to motion film. On July 9, 1913, Thomas Edison was quoted in New York's *Dramatic Mirror* as saying,

> Books will soon be obsolete in the schools. Scholars will soon be instructed through the eyes. It is possible to teach every branch of human knowledge with the motion picture. Our school system will be completely changed in 10 years. (Quoted in Saettler, 1968.)

That was the hyperbole of 1913. The disillusioned version is supplied by Gregory in 1922.

> Educational films for schools comprising stories, technical subjects, travel, geography, history, language, and hygiene. The group of films especially prepared for school use is very small. Most of the so-called educational film consists of material that has been stripped from cast-off commercial film and retitled, and is being offered now for school purposes. Much of the film is shown in schools because of the novelty of the motion picture. In the effort to keep pace with the commercial exhibitor the schools frequently have disregarded quality. Experienced and skilled educators have given the film material but comparatively little attention. The material has been too often accepted without protest if it is low priced. (Quoted in Saettler, 1968.)

The next two major media developments were educational television and the computer, and both suffered the invention- to-disillusionment cycle. However, a parallel strand of technology developed concurrently with these two media, viz., attention to the systematic design of instruction. What instructional design has successfully given us is a set of tools to help in the preparation of content in certain areas that will facilitate learning, those areas being largely skill development, both in cognitive and psychomotor domains.

The marriage of instructional design with media production indeed led to more effective instructional media.

The research associated with these technologies did have a pernicious side-effect. In the context of this research was born the notion of "traditional education" as the straw man against which mediated instruction would be compared. The measure of effectiveness became whether mediated material "worked" better, the same or worse than a teacher. The result was to foster competition between teachers and technology with neither side having much appreciation for the other.

The foregoing is also relevant to distance education because it is technology dependent. Without some awareness of the history of educational technology, we risk becoming trapped in the cycle also and miss opportunities to enhance secondary education. Therefore we must keep in mind two caveats. The first is, beware exaggerated claims for the technology. The second caveat is, beware comparing the results of distance education with a hypothetical ideal classroom. In the same way in which educational television and computer assisted instruc[illegible] were compared with a "live teacher" it is tempting to compare distance education to education in a "real" classroom. This comparison is frequently supplemented by the assumption that all education in "real" classrooms is of a superior quality. This is unfair for a number of reasons. First there are students who are more comfortable studying in distance education courses than in courses taught locally. Second, for some types of content distance education materials are superior to those normally available in the classroom. Third, and probably most important, in many instances the point of comparison should not be with a hypothetical ideal but with nothing--without the distance education version of the course there would be no course available to students in the small school.

Is there a mind-set that can help us break free of the problems which have plagued the introduction of technology into mainstream education for a century? One suggestion would be to forsake the dominant conception of distance education as a method and to shift the emphasis from method to condition. In other words, distance education is first and foremost education. Second, it is education in a setting in which a particular set of constraints must be overcome. To describe the constraints merely as "distance" is not particularly useful at the level of curricular goals. Of more interest, is understanding the impact of the constraint upon those goals and asking the question, "Given the goal, the students, and the constraints, what teaching techniques are appropriate to achieve that goal?"

Managing Distance Education in the Secondary School

Though an over-simplification, it is convenient to divide distance education methodologies into two types: independent study and distributed classroom. The independent study approach leaves the students to work largely on their own using materials specially prepared for the purpose, commonly print materials supported by such other media as audiotapes, videotapes, and computer assisted instruction. Tutors are available to assist the students and mark their work and may be contacted in a variety of ways including telephone, FAX, and electronic mail. In contrast the distributed classroom approach tries to build communicative linkages between students and teacher(s) in a fashion akin to a real classroom, i.e., to foster interaction among the parties involved and to use that as a means of instruction. Typically the linkages are provided through audioconferencing which must be done in real time, or through electronic mail and electronic bulletin boards in which communication can take place without the parties being linked simultaneously.

The administrative structure to support either or both approaches can take four forms: (1) local multi-class, (2) small clusters of schools, (3) consortia, or (4) wide-area, or province-wide. In many ways the notion of the local multi-class is an alternative to distance education rather than an actual form of distance education. By shifting the burden of teaching from the teacher to independent learning materials, it is possible to have many subjects being studied in the same room at the same time supervised by the same teacher. An example would be a small school that does not have sufficent teaching resources to offer all eight mathematics courses of the Alberta High School curriculum if the teaching is to be the primary source of instruction. By shifting to independent study with appropriate materials several mathematics courses, if not all eight, could take place simultaneously. In this case the teacher's role shifts from its traditional one to that of supporting the students in a variety of ways such responding to problems when they arise and introducing material that is known to be difficult. The roles of tracking, testing, and marking in this case can be given over to a computer managed learning (CML) system.

A second approach to distance education in the secondary school could be an arrangement to share staff among two or three schools within the same school district. Teachers in one school teach students in another school within their subject specialties. The general approach can be either independent learning in which the teacher serves as tutor/marker for students in the other schools, or distributed classroom in which all the students would be linked in a teleconference.

A third approach is the consortium. Whereas the small cluster would probably take place within a single school district, consortia assume that a number of school districts will be involved, and that there will be the need for tutor/markers dedicated to the distance education plus an adminstrative structure to coordinate the services.

The final approach noted was that called wide-area in which distance education services cross many school districts and may be province-wide or even inter-provincial. The services of such agencies as the Alberta Correspondence School and ACCESS radio and television are examples of a wide-area approach to distance education.

During 1987-89, two projects were mounted by Alberta Education to test various approaches to incorporating distance education in secondary schools. One was the Distance Learning in Small Schools (DLSS) Project which tested a consortium approach, and the other was called Distance Learning Project North (DLPN) which, for the most part, tested the multi-class approach, though some other elements of distance education were tried. The DLSS project in its first year involved 13 small high schools in the south-eastern quadrant of Alberta, and expanding to 28 schools in the second year. Each school was equipped with a FAX machine and teleconferencing equipment and tutor/markers were engaged on a full or part-time basis to cover most subject areas in the Alberta high school curriculum. Students wishing to take courses not available locally could register for the distance education version. The materials used were those produced by the Alberta Correspondence School. Assignments were FAXed to the tutor/markers and the results were FAXed back. This led to the comment in some quarters that this version of distance education was little more than "correspondence school with a faster mailman". The fast turnaround time, however, was a significant improvement over the three week turnaround time associated with correspondence school. If students could not get help locally with problems, they were free to phone or FAX the tutor/markers. Though a small amount of teleconferencing took place, the predominant form of instruction was independent learning. The general reaction of the students was positive. A few actually preferred it to classroom instruction for a variety of reasons. Most, however, felt that, though they would have preferred to have the courses available through classroom instruction, the distance education versions offered them opportunities which they otherwise would not have had.

Distance Learning Project North largely concentrated upon the implementation of a CML system as an aide to teaching mathematics. The materials used were again those developed by the Alberta Correspondence School; the CML system introduced was that developed by Computer Based

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Training Systems which now runs on the Digital MicroVAX 3000 series computers. Besides CML, some DLPN schools explored the small cluster model for one or two subjects.

It is not the intent of this paper to report on the evaluation of the two projects. Evaluation reports for both are available from the Learning Resource Distribution Centre of Alberta Education (Clark and Schieman, 1990; also Clark and Haughey, 1990). For purposes of this paper the most significant outcome of the projects was (1) the lessons learned about managing resources for distance education in secondary schools and (2) the evolution of the perception that we have much yet to learn about pedagogy in the context of distance education.

The management of distance education must be concerned with seven categories of resources: (i) teachers, (ii) support staff, (iii) facilities, (iv) library/media centre, (v) equipment, (vi) finances, and (vii) administration.

Teachers. There are at least four roles which teachers play in distance education. One role is that of consortium teacher (or tutor/marker, as they were called in the Alberta projects). Here the teacher is responsible to the consortium for teaching a subject to students in some or all of its schools. If the dominant instructional method is independent learning, the teacher may be referred to as a "tutor/marker". But the instructional approach might also be that of distributed classroom with a significant portion of teaching being done through such means as audioconferencing.

A second role for teachers is as a teacher with primary responsibilities in one school but teaching students in one or two other schools as part of a small cluster arrangement. Again the teacher is involved with either or both of the dominant distance education models.

A third role for a teacher is in the context of a multi-class environment. Here the dominant instructional approach is independent learning probably supported by a CML system. In this case the role of teachers is a supportive, facilitating one in which they tend to deal with problems as they arise or to head off anticipated problems by introducing difficult material in advance of the students encountering it in the independent learning units. This is a very demanding role for teachers since the body of content from which problems may arise at any one time is considerably larger than in the traditional classroom. It also requires familiarization with the CML system to make best use of such capabilities as report generation.

The final role which a teacher has in distance education is that of local support either on a formal or informal basis. Even with telecommunications between students and tutor/markers, it is desirable to have a local teacher or teachers to whom students can turn as a front line of assistance. Formally teachers may be assigned to supervise the distance education room as part of their teaching load, or have students approach them informally if they are known to be knowledgeable in an area requiring assistance.

One point which should be made about all teacher roles within distance education is that they are foreign to teacher training. The fact that they may be skilled and knowledgeable about the traditional classroom does not necessary mean that they will be either comfortable or skilled in distance education. Teachers being asked to become involved with distance education for the first time should be provided with appropriate inservice.

Support Staff. Providing support staff for a distance education program includes making provision for clerical, maintenance, and coordination functions. Decisions must be made about whether students will operate the FAX machine themselves, for example, or whether it will be done by school staff. Records must be kept not only of marks but of transmission and receipt of assignments. Glitches in telecommunications can result in lost assignments. Maintenance of equipment may be handled on a contract or walk-in service basis, or in a consortium it may prove more cost effective to have a maintenance technician for the consortium. Finally local coordination of the program must be considered including registering of students, acquiring materials, and maintaining links with the tutor/markers. For convenience support has been listed as a matter of functions to be performed rather than a listing of staff positions. The actual staff configurations used to approach these functions may differ from school to school. In the DLSS project, for example, various configurations of professional staff, secretaries, and teacher aides were employed successfully.

Facilities including School Library. Unlike versions of distance education in which students work independently at home, incorporation of distance education into a school makes an impact upon the physical plant. Students must have a space to study, preferably in a room set aside for distance education and equipped appropriately. Such a space should make provision for independent study and small group work. It must also provide for teleconferencing such that others working will not be disturbed by a teleconference session. It is convenient if the FAX machine is located in the space provided for distance education. Space is also required to house resources, audiovisual equipment, computers, etc. Proximity of distance education space to the library/media centre is ideal in that this is the traditional

location of resource material and equipment in a school. When distance education is introduced into a school, special attention must be paid to the needs of the school library given that students may require extra resources for courses not previously available. For example, if students are taking art in a school where it was not previously available, there will probably be need for the school library to acquire such reference works as a book on art history.

Equipment. Depending on the nature of distance education being implemented, the needs for equipment will vary. Core equipment appears to be a FAX machine and a telephone. If audioconferencing is to be implemented, then a teleconferencing convenor is required. Television broadcasts will probably require a satellite dish. Other possible equipment requirements include a microcomputer and modem for electronic mail and a CML system and the computer hardware to run it.

Finances. Adding a distance education component to a school is not without cost. Budgetary items which must be addressed include capital costs, staff, telecommunications, supplies (both consumables and non-consumables), equipment maintenance, and purchased services (where marking services, for example, are purchased from a consortium). Those interested in a comparison of costs between distance education and traditional education are referred to the evaluation of Phase 2 of the Distance Learning in Small Schools Project (Clark and Schieman, 1990).

Administration. Administration is a matter of concern at all levels in a distance education system. At the local level it is a matter of fitting distance education into the overall scheme of things in the school, assigning resources, monitoring progress, and engaging in trouble-shooting as the need arises. At the consortium level, it involves such matters as coordination of services among the members; acquisition, inservice and monitoring of tutor/markers; establishment of fee schedules. Particularly where consortia are involved, matters of administration can make or break an effective distance education program. Consider, for example, the fact that schools tend to have timetables which are independent of each other. Some schools operate on 45-minute periods, some on 60-minute periods, some on 90-minute periods. As long as they are operating independently of each other this is of no concern. However, when a tutor/marker tries to set up a teleconferencing session for students who are taking other courses locked into different timetables, it becomes very difficult to arrange. This more than any other factor brought a virtual end to the distributed classroom model in the DLSS project. It became impossible to schedule audioconferences when all the students who needed to participate could attend.

This, then concludes our look at management issues associated with the integration of distance education into the secondary school. On the whole, we know what has to be done to implement an effective program, particularly where the independent study model is adopted. Where the desired model is the distributed classroom, more difficulties of management nature tend to arise. It is simplistic to suggest that all would be well if schools adopted the same time-table or at least all set aside the same block of time each day for distance education courses. Most small secondary schools are contained within facilities housing grades 1 to 12 and timetabling is for the whole school, not just the high school. Further the time table may have to take into account such matters as visits from itinerant teachers in some specialty areas not to mention busing schedules.

Pedagogy

One of the conclusions drawn from the evaluation reports of both the DLSS Project and DLPN was that there was need to push beyond refinement of the management of distance education to concentrate upon developing appropriate pedagogical techniques. There are at least four categories of pedagogical techniques needing to be explored: those specific to independent study, those specific to the distributed classroom, those associated with student support in both models, and those associated with motivation in both models. An assumption underlying the recommendation to pursue pedagogy is that a substantial measure of equivalence should exist between courses as they are normally taught in high schools in Alberta and the versions of those courses taught through distance education. Curricular goals cross cognitive, psychmotor, attitudinal, and interpersonal domains. Independent study is appropriate for only some of these domains (in particular skills), and there exists a temptation to revise the curricular goals to match this one distance education model. Taking this approach has made it possible to enrich the offerings of schools beyond what they could offer previously. Therefore one should be cautious about being overly critical. Nevertheless, revising goals to match methods ought to be a short-term solution while we seek the means of addressing those goals which we cannot now meet.

Independent Study. Of the two dominant approaches to distance education, we are most knowledgeable about preparing materials for independent study. Over three decades a considerable amount of knowledge in the area of instructional design has been amassed and this knowledge is being applied to preparation of effective materials. One has only to compare the instructional modules in the variety of media formats presently being developed by the Alberta Correspondence School with previous versions to recognize the

strides which have been made. As noted earlier in this paper, however, instructional design techniques are most refined in the area of teaching skills. As one moves away from skills content, for example into areas of aesthetics and moral development, one becomes less secure in the application of these techniques. Furthermore it is still possible to produce very well designed but dreadfully dull instruction. This leads into the topic of motivational design for distance education which will be addressed briefly below.

Distributed Classroom. The rationale for the distributed classroom approach to distance education is provided by curricular goals which are dependent upon communication among groups of students. In some instances, such as in the Career and Life Management curriculum or in Social Studies, the process of the interpersonal activity represents a curricular goal in itself. We have noted above that this model of distance education poses administrative problems because of timetabling (not to mention telecommunications costs). An alternative which would circumvent "real time" problems would be the use of electronic bulletin boards. Computer mediated communication, however, is just becoming an area of interest for researchers, and we are not sure at this point what the effects upon communication are when one moves from the spontaneity of "live" communication to that of delayed and edited communication. One can hypothesize that the different forms of communication would be appropriate for different educational goals. Addressing issues of the absence of body language in audioconferencing and its effect on teaching and finding alternatives if they exist warrants further explanation.

It should be noted that curricular areas for which a particular distance education model is effective may not be intuitively obvious. For example, it would seem that second language teaching would be most effectively done using a means such as audioconferencing. However, there is a considerable amount of dependence upon visual cues in language learning, and the time constraints of audioconferencing do not permit much practice on the part of each individual. For this reason one must question whether audioconferencing is appropriate in this instance. One might well argue that an alternate approach be followed for beginners and reserve the distributed classroom for advanced students.

This paper has focused upon audioconferencing as the dominant form of distributed classroom. This has been done because it seems the most likely form to be employed at this time in schools in Alberta for reasons of cost. The addition of an audiographics system enables computer graphics to be transmitted on the same telephone lines as the audio signals which can enhance audioconferencing considerably. We have not considered

one-way-video two-way audio which again enhances the distributed classroom. The reader is referred to the TI-IN network in Texas as an example of this implementation. No matter what form of the distributed classroom is employed, there is room for substantial research in the associated pedagogy.

Student Support. There are at least two areas of student support which need to be recognized when a distance education program is implemented in a high school, both of which stem from students' prior experience with schooling. First, only a small number of high school students appear by nature to be independent learners who function comfortably without extrinsic motivation. Schools embarking on distance education which left it up to the students to keep track of their work and keep up to date found many students getting behind and not finishing their program. (This incidentally matches the high incompletion rates associated with traditional correspondence education.) Most schools have resorted to a public tracking system such as a progress chart on the wall as a means of persuading students to keep up with their work.

Helping students keep up with their work in independent study is, in fact, a subset of a more general need for student support, viz., assisting them to adapt to the myriad of differences between the classroom and independent learning. For example, they need to be taught how to extract information from print materials, how to use audiovisual materials to get the most out of them, how to seek information and help, and how to engage in peer tutoring effectively. One of the biggest challenges is to help student make a mental switch from an environment in which everything important is taught by the teacher while the print materials are supplementary to one in which the important content is contained in the mediated materials and students must learn from them, getting supplementary help from teachers.

Motivation. The final area for consideration in this paper under the rubric of pedagogy is motivation. Motivation as a teaching technique in the classroom is largely restricted to attention capturing activities and to the communication of the teacher's enthusiasm for the subject. In distance education it is more difficult to implement these techniques. They do, however, represent a subset of techniques available. The individual who has probably done the most in recent years to systematize approaches to motivation is Keller (1987) with his ARCS model. The acronym stands for the for general categories into which he places motivational techniques: Attention, Relevance, Confidence, and Satisfaction. To explore this model in any depth is beyond the scope of this paper. Suffice it to say that Keller and his associates have laid solid groundwork for approaching motivation both in the classroom and in the

application of instructional design techniques. Work is only beginning on extending his model into distance education, but it does offer promise.

In Conclusion

The theme running through this paper is first that we must be careful not to become so enchanted with the gadgetry of distance education that we overlook the key elements of management and pedagogy. From such experiences as the two distance education projects in Alberta we have gained considerable expertise in the management of distance education as it is applied to extending the offerings of small high schools. Having travelled this far, the journey should pursue refining the pedagogical techniques which may be applied in distance education.

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Teacher Perspectives on Distance Education

Noel Gour
Alberta Teachers' Association

Introduction

When we talk about the education of students, we generally assume that we are talking about a teacher and a number of students being taught in a classroom. A new mode of teacher and pupil interaction has been evolving in Alberta. The mode or method is called distance education. Why has this method been contemplated in Alberta?

Rural small high schools are wanted by the communities, and yet the demand for excellence and for equality of access has strained the small high school's capability to deliver programs that are equitable to those offered by larger urban high schools. If Alberta's small high schools cannot offer a full Alberta program of studies because of the limited staff and student numbers, then two options are open to school jurisdictions: consolidation and closing smaller schools or a delivery of the program in a different manner. The latter form of program delivery was chosen because the 1985 Secondary Education Policy for Allberta suggested that remote or rural schools, limited in teacher personnel and/or resources, could use distance education as a method to offer a broader choice of courses and thereby alleviate the need to close these schools.

Background

In 1987, the Alberta Department of Education (Alberta Education) began the Distance Learning in Small Schools Project. It was a developmental program by Alberta Education designed to address the issue of equity in education and bring into play the interaction of instructional, economic and political factors associated with high school education in small rural communities. Thirteen schools in ten jurisdictions participated initially.

Each participating jurisdiction was expected to provide a tutor/marker teacher (normally an off-site teacher on a full-time or part-time contract with one jurisdiction, but not assigned to a specific school) who would accept students from all the jurisdictions and do their tutor/marking work at home for specific specialized subjects. The program of studies was supplied by the Alberta Correspondence School.

In 1988, fifteen more schools with fewer than 100 students joined the Project. This increased number of students accessing distance education courses to 1,000.

At the same time that the small schools project was being established, the Alberta Correspondence School wanted to replace mail-in correspondence courses with better designed learning packages because their programs were not meeting the requirements of the revised program of studies for most high school programs. Towards that end, the correspondence school contracted one-hundred teachers to write and revamp twenty courses. The new learning packages reflected not only the revised curriculum but also a delivery of the course content that permitted the use of videotapes, computer software and other media.

In September of 1988, a second project, the Distance Learning Project North, began in twelve schools in the Peace River region. Project North focused on the teaching of the mathematics courses by computer. The math packages included print modules supplemented by video and a computer software package that permitted the tracking of student progress. Tests, assignments and exercises were generated by the computer, at each student's level, from data banks that were stored in the computer. The on-site teachers were expected to assess learning needs and provide individualized or small group instruction.

The Alberta Teachers' Association was supportive of Alberta Education's endeavors. The Association established an ad hoc committee to review the distance education projects and their effects on the students and teachers. A committee composed of teachers participating in one of the projects was asked to recommend policy for the 1990 Annual Representative Assembly of The Alberta Teachers' Association. The committee began its task by reviewing each of the two projects and asking the following questions.

Distance Learning Projects Review Questions

The following areas needed to be evaluated and solutions considered in each of the two Alberta government projects. These areas of study included the tutor/marker teacher, the teaching roles of the tutor/marker, the school's role, the principal and superintendent role, the teacher evaluation procedures to be followed by the jurisdictions, and the Computer Management Learning program and the teacher. Each is reviewed below.

The Tutor/Marker

Tutor/marker teachers were seen as subject specialists who used modern technology such as the FAX machine and the telephone to communicate with their students. As teachers, they used lessons developed by the correspondence school and modified or augmented the materials in order to meet curricular and student needs. They taught their subject to students attending various schools and had to adapt to the demands of many principals with their differing views on education, and to the differing policies among the systems they served. As a consequence the members of the committee explored such areas of concern as:

- Can a networking system be developed between the tutor/marker teachers and all the schools involved?
- What is the effect of isolation on the relationship between teacher and student?
- Should all tutor/marker teachers be assigned to a specific school even though they chose to work at home?

Teaching Roles of Tutor and Marker

All indications pointed to the tutor/marker teacher being equally a tutor and marker. Students could telephone them directly or through an assigned teacher at the school. Teleconferencing was also available for teacher-student verbal interaction. Futhermore, the marking requirements together with the important stage of tutoring were seen to be time consuming. FAXing of student materials needed to be scheduled for the evening in order to permit student tutoring assistance. However, communication with the school's staff appeared to be remote, and teachers at the schools were not always aware of the student's program, progress or lack of progress. As a consequence, the members of the committee explored such areas of concern as:

- What is a reasonable work load for tutor/marker teachers?
- How many different courses could be offered by each tutor/marker teacher?
- Could a formula be devised that reflected course marking load and number of students?
- What should be the role of the school and its teachers towards the student being taught via distance learning tutor/marker teachers?

School's Role

Students needed to be supervised at school even though they received their lesson explanations, lesson corrections and testing from the tutor/marker teacher, a source external to the school. The supervision of these students at the school appeared to be ill- defined. Teachers, it was thought, may not be cognizant of their role in the distance learning project. As a consequence, the role of the school vis-a-vis tutor/marker teachers varied from school to school. The transmission of lessons via FAX machines, for example, was being handled by either students, staff or aides. The tutor/marker teacher could be frustrated by the lack of security at the school. The teachers at the schools may not be aware of these frustrations and may also be frustrated with the difficulties in direct contact with the tutor/marker teachers.

The committee, therefore, explored the following areas of concern:

- What was the school's responsibility for the security of the materials being transmitted?
- How should examinations be sent to the student when the line is not secure from students having direct access?
- What was the role of the teachers in the school to ensure exams were supervised and the answers were forwarded to the tutor/marker teachers?
- What role should the aides or secretaries play in facilitating the transmission of student materials?

Principal and Superintendent Role

The principal and superintendent play a crucial co-ordinating role in distance education. The schools participating in the projects were interdependent. The co-ordination among the schools and between the jurisdictions in the decision-making process was essential. For example, the school calendar varied from jurisdiction to jurisdiction. The tutor/marker teachers seemed to be forgotten when the calendar was prepared independently by each jurisdiction. The same can be said of individual school timetable schedules. The committee, therefore, asked:

- Could the jurisdictions coordinate their calendars?
- How flexible could principals be in order to accommodate in- school and distance learning timetabling requirements?

Teacher Evaluation

Pursuant to the Alberta School Act, 1988, all teachers are hired by one employer—one jurisdiction. For purposes of certification and evaluation of teacher competence, the superintendent who hired the tutor/marker teacher assumed that responsibility. However, the evaluation procedures for teachers who work at home may demand some rethinking because distance education teachers may not follow recognized teaching methodologies for purposes of evaluation. The principal's role vis-a-vis these teachers may not include evaluation. Tutor/marker teachers may, for practical purposes, not be

accountable to anyone other than their hiring superintendent. Areas of concern that needed to be explored by the committee were as follows:

- What evaluative criteria could be used by the superintendent?
- Could the superintendent delegate the task of teacher evaluation to one of the principals?
- Would the School Act, 1988, permit such flexibility?

Computer Management Learning (CML) and the Teacher

In Project North, the students enrolled in grades 10, 11 or 12 mathematics participated in the CML program. The students followed the program at an individual pace. Student timetabling flexibility allowed students to enrol in a math course that met their academic needs. The teachers were expected to assist the student individually or in small groups. Teacher intervention in the teaching process was to be held at a minimum. Controversies over the teacher's role erupted at the very beginning of the pilot year. Teachers argued that not all students were good readers. They further argued that students were not all self-motivated when it came to doing their school work. Certain students would benefit more with a traditional form of education whereas others could work well on their own. Members of the committee involved in the CML program were concerned with the following:

- What was the role of the teacher in deciding on the best methodology for student instruction?
- Could a teacher refuse to participate in such a program?
- When should the teacher intervene in the teaching-learning process of the student?
- Was the CML program utilized by the teacher to permit more course offerings per period?
- Was the CML program an equitable form of education for the student?

Policies on Distance Education

As a result of the review of the projects The Distance Education Committee of the Alberta Teachers' Association recommended long range policies and current directives to the 1990 ANNUAL REPRESENTATIVE ASSEMBLY of The Alberta Teachers' Association. The long range policies adopted by the Assembly are as follows:

Long Range Policies

1) The Alberta Teachers' Association advocates that distance education be viewed as an instructional mode using various technologies to bridge a geographic gap between teacher and student in a situation wherein the provision of student program cannot be provided in the conventional setting.

It was noted at the Assembly that this policy provided for three essential components in distance education: various technologies, geographic separation of teacher and student, and an inability to provide a program in the conventional setting. It was also noted that all three components had to be present in order to recognize the program as falling within the definition of distance education.

2) The Alberta Teachers' Association advocates that distance education be restricted to the secondary levels and

3) The Alberta Teachers' Association advocates that distance education only operate as an additive program.

The committee argued at the Assembly that the distance education program was not designed to provide instruction in the intergrated learning format of the elementary curriculum. It was, rather, a delivery mode for course-based curriculum. It was further suggested that the conventional classroom setting with an on-site teacher should continue as the preferred instructional mode. This should be seen as a right of students and parents which can only be altered by the inability of the jurisdiction to provide instruction through this conventional means. The distance education delivery mode must not replace the conventional mode of instruction.

4) The Alberta Teachers' Association advocates that the teacher must be the essential element in the delivery of instruction to students via any distance education program and

5) The Alberta Teachers' Association advocates that school boards must demonstrate to parents their inability to provide students with instruction in a conventional setting prior to any adoption of a distance education program.

It was suggested to the Assembly that no technology could replace the teacher's role. Experience in Alberta had demonstrated that the lower the intervention of teachers in distance education programs, the lower the achievement of pupils and the higher their frustration and dropout levels. As a consequence, the best method of instruction should be available to all students. Parents should be consulted if a school jurisdiction wished to use an alternative instructional method.

6) The Alberta Teachers' Association advocates that school boards recognize that the nature of a distance education program imposes its own set of unique responsibilities on teachers which must be recognized in the computation of their workload.

It was noted at the Assembly that distance education teachers were responsible for the delivery of instruction in accordance with a prescribed course of studies to students who may be geographically separated. The geographic gap between teacher and student had to be resolved by using communication technologies such as the FAX machine, teleconferencing and/or one-on-one telephone tutoring. Communication with the administrator and staff of the school(s) and parents also imposed a set of unique responsibilities that did not affect an on-site teacher.

Current Directives

The committee also recommended four current directives for action at the 1990 ANNUAL REPRESENTATIVE ASSEMBLY. The directives for action were as follows:

1) Be it resolved, that all courses offered by a junior/senior high school via the distance education mode of instruction be timetabled in the regular school timetable and supervised by an on-site teacher whose primary function is to facilitate the work of the distance learning student during that specific timetabled period.

At the Assembly members of the committee noted that students needed to be supervised by a teacher in order to ensure that the course materials were completed as scheduled, examinations were received and administered, and student/distance education teacher communications were facilitated. An on-site teacher cannot perform these extra tasks while teaching a class. Specific timetabled periods were preferred.

2) Be it resolved, that the Deparment of Education in its formulation of distance education grants adopt as its goal for equity access to approved curricular programs by all students regardless of location or circumstance.

Members of the Assembly noted that access to an education, regardless of location or circumstance was alluded to in the School Act, 1988. The distance education equity grant attempted to fulfill this goal. However, there was a need for an unequivocal statement that students have the right to access approved curricular programs regardless of location or circumstance.

3) Be it resolved, that insufficient enrolment preventing the provision of a full complement of courses be the sole criterion used to determine access to distance education grants.

It was noted that the purpose of the distance education grant was to enable low enrolment senior high schools to offer a wider range of student courses than possible under the traditional method of instruction. The Minister and the Department of Education had consistently stated that distance education was an additive program to assist all jurisdictions with low senior high school enrolment.

4) Be it resolved, that the Alberta Teachers' Association urge the Department of Education to develop long-term budgetary commitments for distance education.

Members of the committee noted that there was a need for long- term budgetary planning because jurisdictions will hesitate to commit funds for a program that does not have the Department of Education's long-term support.

Summary

The two projects in Alberta have evolved into regular programs. The Department of Education has committed resources to upgrade the correspondence courses in support of distance education. With the encouragement of the government, new distance education consortia have been established in Alberta.

There appears to be a demand for distance education learning in Alberta. A few of the concerns relating specifically to teachers are these:

1. off-site tutor/marker teachers may be isolated professionally, administratively and from their students and their communities. How can this isolation be minimized and effective evaluation take place?

2. tutor/marker teachers served a number of schools, communities and administrators all with different expectations and demands. The challenge to teachers is to make such a system workable.

3. the workload of tutor/marker teachers was defined by credit hours, number of subjects, number of students, hours of work to list a few. The challenge to the profession is to define an appropriate workload. That challenge is still ongoing.

4. the on-site supervisor's role must be meshed with the off- site tutor/marker teacher. The challenge for teachers is to define the expectations for each teacher in regards to such matters as security of exams/assignments, individual student assistance, curriculum and materials, and to assess the impact of distance education on the student, school and community.

Library Services to Athabasca University Students

Steve Schafer
Athabasca University

Introduction

Athabasca University is one of three educational institutions in Canada that offer courses at the university level exclusively through distance education. The other two institutions are the Open Learning Agency in British Columbia and the Tele-université in Quebec. An exclusively open university is unique in that the courses or programs offered are not merely "regular" courses delivered through a department of extension or the correspondence arm of the institution. Rather, the educational institution is based on distance education as a delivery system; this system is distinct in that the student and teacher are usually separated by both space and time. The instructor and student may never meet. Therefore, it is crucial that both the instructor and the student fulfill their role to make the educational experience positive and successful. Distance education takes places when distance teaching and distance learning is successful.

Attempts have been made by distance educators to define distance education. Desmond Keegan provides the following discussion:

> Distance education is a generic term that includes the range of teaching/learning strategies referred to as "correspondence education" or "correspondence study" at further education level in the United Kingdom; as "home study" at further education level and "independent study" at higher education level in the United States; as "external studies" in Australia; and as "distance teaching" or "teaching at a distance" by the Open University of the United Kingdom (Keegan, 1990, p. 29).

Unfortunately, this definition relies on synonymous terms to define distance education. In *Perspectives of Research on Distance Education*, 1990, Borje Holmberg provides a more explicit definition:

> The term distance education covers the various forms of teaching and learning at all levels which are not under the continuous, immediate supervision of tutors present with their students in lecture rooms or on the same premises, but which, nevertheless, benefit from the planning, guidance and tuition (meaning tutoring or teaching) of the staff of a tutorial organisation. Its main characteristic is that it relies on noncontiguous (mediated) communication. Distance study denotes the activity of the students, distance teaching that of the tutorial organisation (Holmberg, 1990, p. 1-2).

Distance education enables a student to study at his or her own pace and place. Distance education means the student is responsible to learn the material for him- or herself. This may be an advantage. For example, the student works through the material, doing the assigned readings, completing the written and oral assignments, and taking the exams. The student receives a complete course package, works through the course individually, and has access to one-on-one telephone tutoring and library services. No time is required to travel to and from class and no time is taken up with activities unrelated to learning (such as finding a parking space).

Athabasca University

Athabasca University is a single-mode open university, "devoted exclusively to distance education" unlike dual-mode open universities, which are "regular campus-based institutions with a distance education component" (Konrad and Small, 1989, in Sweet, p. 197).

Athabasca University's *Mission Statement and Long-Term Plan* was adopted at the fifty-ninth regular meeting of Governing Council, on May 30, 1985.

This document identifies Athabasca University's position and commitment to providing distance education. The mission statement reads as follows:

> Athabasca University is dedicated to the removal of barriers that traditionally restrict access to and success in university-level studies, and to increasing equality of educational opportunity for all adult Canadians regardless of their geographical location and prior academic credentials. In common with all universities, Athabasca University is committed to excellence in teaching, research and scholarship, and to being of service to the general public (Athabasca University, 1985, p. 1).

Athabasca University provides a unique opportunity for adult Albertans, indeed all adult Canadians, to pursue a university education. The only requirements for admission are that an individual be a resident of Canada and be at least eighteen years of age. Admission is usually granted regardless of prior education.

> The major characteristic of the open university system is that its students are not required to possess a formal education qualification before being accepted for entry. The requirement of a formal qualification for entry has been found to inhibit the pursuit of higher education by many aspirants in the traditional educational system... The open university students are expected to study in their homes and in their spare time, since most of them are often engaged in full-time employment (Salisu, 1984, p. 38).

Athabasca University is a particularly significant avenue through which students located in northern or rural communities may earn a university education. Courses offered by Athabasca University are designed with the distance student in mind and support services beyond the complete course package contribute to success in the first course. Success in the first course increases the likelihood that a student will enrol in another course. It is expected that success breeds success with respect to studying by distance education.

Students who are admitted to Athabasca University may take courses in the three faculties: Administrative Studies, Arts, or Science. Courses may be taken leading to five degrees: Bachelor of Arts, Bachelor of Administration, Bachelor of General Studies, Bachelor of Nursing (post-R.N.), or Bachelor of Commerce. In addition to the degree programmes, university certificate programmes and a selection of non-credit courses are offered. Unlike a traditional university, students may enrol in a course, beginning the first day of any month of the year. Selected courses have fixed start dates, and, other than courses that are offered through seminar support or teleconference delivery,

all courses allow the student to work through the materials at his or her own pace. A three-credit course has a contract period of six months, and a six-credit course must be completed within twelve months.

On admission to Athabasca University and enrolment in a course, each student receives a complete course package containing the required textbooks, an Athabasca University-produced study guide, and a student manual. While the home-study package is the primary mode of course delivery, courses may be supported by teleconference, seminars, a laboratory component, or field work. Increasing development is also taking place in that area of computer assisted instruction.

Each student is assigned a telephone tutor, with whom contact is recommended on a regular, toll-free basis, for the duration of the contract period. In addition, students have access to library services. Most courses include a "supplementary materials list" which identifies specific materials that may be helpful to students in completing a course assignment, essay, or project. The materials on the supplementary materials lists may be monographs, journal articles, sound recordings, video recordings, model kits, physical examination instruments, or cultural artifacts. While students are encouraged to use the Athabasca University Library, it is also anticipated that students will develop the essential skills that will enable them to use library facilities in their own communities.

On October 19, 1990, there were 5,054 active students and 6,805 active registrations. Within the past three years, 1,576 of these students had successfully completed at least one other course; 833 had successfully completed two other courses; and 425 had completed three other courses. While these figures may be subject to several interpretations, the figures indicate that over 5,000 students are studying without having to relocate; in other words, the classroom is in their home. Each student has the liberty to work through the course as he or she chooses, working out a study schedule that suits the individual's lifestyle. Athabasca University students are usually older, engaged in employment; most are settled in communities, and have family responsibilities. The Athabasca student must be, it would seem, more diligent, more disciplined, and more determined to progress successfully through a program via distance education.

Library Services

The Library is a fundamental aspect of all higher education, but it is a particular, if not peculiar, challenge to offer library services to students who are not on the campus of the institution in which they are enrolled. While Athabasca University takes pride in its "complete course package" and tutor support, the course package may prevent many students from developing basic library skills and incorporating other materials into the subject matter when completing a course assignment. Students are not required to attend a library orientation at Athabasca University as they might at a traditional university. However, students should know that Athabasca University does provide library services to its students. It is understood by the Library staff that many Athabasca students live in communities in which there are limited, or no library collections, especially those library collections that would contribute to academic studies. For this reason, the provision of library services to Athabasca University students is a most challenging and rewarding endeavour.

There are over 90,000 volumes in the Library and 750 periodical titles. In addition to the circulating collection, there is a solid reference section. While the library collection is small and young, some index and abstracting services are available in print format. The Library has access to most index and abstracting services through on-line database vendors such as DIALOG, CanOle, and InfoGlobe. In addition, the library subscribes to CD-ROM editions of ERIC, Cumulated Index to Nursing and Allied Health, PsychLit, Academic Abstracts, and Social Science Citation Index. The CD products are a recent technology, and the faculty and staff are becoming more familiar with them. The Library is able to provide a high calibre of reference service to the University's students. If Athabasca University students are disadvantaged in any way, it is that they usually do not use the Library for themselves. It is hoped, however, that Athabasca University students will develop at least a minimal proficiency in library skills that will enable them to use any library in their vicinities.

Students may access the library in one of three ways. First, students may use the library in-person. This type of user is not common, because most Athabasca University students live in areas some distance from Athabasca. However, faculty and staff of Athabasca University are frequent users of the library. Second, students may phone the library circulation desk to request materials. As mentioned previously, most courses include a supplementary materials list, comprising specific materials that are useful for a given course. Students may request materials from this list, or on the basis of the topic of their assignments. Provision is made to take student requests by telephone

twenty-four hours a day. Third, students may mail-in or FAX their requests to the library. If there is no real rush for materials, the mail system is fine. However, in most assignments or projects, there is a sense of urgency to receive the library materials as quickly as possible, and the FAX request is being used more frequently. A FAX request also provides a written record of the request to the library circulation staff.

All requests for library materials are dealt with quickly. The turn around time, that is the time from when the request is received to the time the library materials are sent to the student, is usually less than twenty-four hours. Materials are checked out to the student for a four-week period and are sent to the student by Canada Post to the student's address postage paid return, by University courier to one of the three Regional Offices within Alberta where the student may pick up the materials, or by government courier to a government office in Alberta where a student may pick up the materials. If materials are required for a longer period of time, renewals may be requested. Two renewal periods will be granted if there is no reserve on the material for another patron.

During the 1989-1990 fiscal year, 8,138 requests were received by the Library information desk; 4,116 of these requests were student requests for materials, an average of 343 requests from students each month. During this year, 9,559 items were circulated to students. This circulation statistic shows that, on average, just over two items were sent out for each student request received.

To give you a sense of the situations of many students who study through distance education and use the university's library services, I would like to provide samples of actual requests. These samples reveal how Athabasca University provides an avenue of higher education for individuals who may face, in various degrees, barriers or obstacles.

A staff member of the Northern Regional Office in Edmonton phoned the Library circulation desk, requesting that some material be checked out for a student. The student who works in the high Arctic will be "out" in a couple of weeks to Edmonton and will pick up the material at the Northern Regional Office. He will take the material back with him to his work in the Arctic. The student has no access to mail service, yet his working situation provides some time for him to work on university-level courses through Athabasca University.

A request was received by the library information desk from a student in British Columbia who would be driving to Ontario. The course she was taking required that either the programs be listened to on ACCESS radio or the

audio-tapes be borrowed from the library. She called the library well in advance, requesting that the tapes be sent to the Southern Regional Office, in Calgary, where she would pick them up on her way through the city. She planned to listen to the programs while driving through the Prairies to Ontario, and I imagine, back from Ontario.

A request was received from a student who lives in a northerly community, in which mail service is affected by the change of seasons. When either the river flows or is frozen, the mail can travel. Consequently, during the breakup season mail service is interrupted. The student requested an extended loan, allowing the library materials to be kept longer than the usual four-week loan period. Athabasca University Library is committed to the removal of barriers that would traditionally be restrictive and strives to maintain a flexibility and level of service that contribute to success for Athabasca University students.

Requests are received from students who live in urban centers in which there are academic libraries that can provide more material than Athabasca. Requests are also received from students who live in remote, northerly communities in which there is no library. This student depends totally on the Athabasca University Library to provide library support.

Athabasca University provides a unique learning opportunity for students. Many Athabasca students are married, have families, and employment responsibilities, and are settled in their communities with various activities and commitments. While it is not impossible for some individuals to attain a university education from a traditional university, it is probable that many would not pursue a university education because of some obstacle or barrier. Athabasca University provides a unique opportunity to individuals who may feel they have missed their chance to obtain a university education. In reality, this person is most likely the one who will be the most successful distance education student.

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